COMMUNITY HEALTH WORKER CERTIFICATE PROGRAM EVALUATION

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ABSTRACT

Racial and ethnic minorities in the United States and in Hawai‘i experience greater mortality and morbidity than non-minorities from many chronic conditions, including heart disease, cancer, and diabetes (Centers for Disease Control and Prevention, 2011; Centers for Disease Control Division for Heart Disease and Stroke Prevention, 2015; Pobutsky, Bradbury, & Wong Tomiyasu, 2011). One approach to combating health disparities involves the use of Community Health Workers (CHWs). Valued for their strong connection to the communities they serve, CHWs effectively bridge the gap between providers and patients of differing ethnic and cultural backgrounds to improve access to and quality of health care, especially for underserved minorities. To build CHW training capacity for the State of Hawai‘i, the University of Hawai‘i Maui College (UHMC) developed the CHW Certificate Program (UHMC-CHW), and a comprehensive evaluation was completed to determine its effectiveness in providing core competency training for CHWs.

This disseration was comprised of three studies. Study 1 measured the effectiveness of the UHMC-CHW courses to teach students the CHW core competencies and improve student confidence in applying these competencies in the field. Overall, students gained knowledge and confidence in CHW core competencies and were satisfied with the courses in meeting their training needs.

Study 2 used qualitative methods to collect CHW employer perspectives on the effectiveness of the UHMC-CHW in preparing new and incumbent CHWs for the workforce in Hawai‘i. Employers reported student participation in the program improved self-confidence and performance in the field.

Study 3 administered a survey to measure the impact of the UHMC-CHW on the careers of certificate completers. Graduates reported employment and wage gains, improvements in the core CHW skills, satisfaction in the program, and a desire to continue their education.

Taken together, findings confirm the program was successful in teaching students the core CHW skills, building confidence in applying those skills, and ultimately improving performance in the field. The program positively impacted the careers of

graduates. Results provide validation for the effectiveness of for the UHMC-CHW to provide core competency training for Hawai‘i’s CHWs.

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LIST OF ACRONYMS

ANOVA	Analysis of variance
C3	CHW Core Consensus Report
CCSF	The City College of San Francisco
CDC-FPEPH	Centers for Disease Control and Prevention Framework for Program Evaluation in Public Health
CHC	Community Health Center
CHW	Community Health Worker
CHW-NEC	Community Health Worker National Education Collaborative
HPDP	Health Promotion Disease Prevention Course
IOM	Institute of Medicine
NH	Native Hawaiian
NHOPI	Native Hawaiian and Other Pacific Islanders
UHMC-CHW	University of Hawai‘i Maui College Community Health Worker Certificate Program

CHAPTER 1

INTRODUCTION

Racial and ethnic minorities in the United States and in Hawai‘i experience greater mortality and morbidity than non-minorities from many chronic conditions, including heart disease, cancer, and diabetes (Centers for Disease Control and Prevention, 2011; Centers for Disease Control Division for Heart Disease and Stroke Prevention, 2015; Pobutsky, Bradbury, & Wong Tomiyasu, 2011). Cultural differences, limited English-language proficiency, substandard living conditions, poverty, and other social determinants of health are contributing factors. Unequal treatment of minorities within health care systems and by providers also has been implicated (Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care, 2003).

One approach to combating health disparities involves the use of Community Health Workers (CHWs). According to the widely accepted American Public Health Association (APHA) definition, a CHW is

> a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served. This trusting relationship enables the CHW to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery. A CHW also builds individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counseling, social support and advocacy (American Public Health Association, 2009, para 4).

Valued for their strong connection to the communities they serve, CHWs effectively bridge the gap between providers and patients of differing ethnic and cultural backgrounds. Also referred to as outreach workers, health navigators, and promotores, CHWs work in a variety of social service and health care settings. Evidence of their effectiveness in improving health outcomes for underserved and disadvantaged populations has grown substantially over the last two decades (Rosenthal et al., 2011). CHWs have been shown to improve outcomes for patients with chronic disease

(Brownstein et al., 2007), increase appropriate healthcare utilization (Viswanathan, 2009), and promote positive health behaviors (Swider, 2002).

Despite the promise of CHWs to improve access to and quality of health care, especially for underserved minorities, development of the workforce has been hampered by unsustainable short-term grant funding (U.S. Department of Health and Human Services Health Resources and Services Administration Bureau of Health Professions, 2007). Consensus is growing among CHWs and stakeholders that standardized CHW training will lead to increased health care integration of and more stable funding for CHWs (Dower, Knox, Lindler, & O'Neil, 2006; May, Kash, & Contreras, 2005). Recent developments indicate forward momentum of the CHW profession. In 2000, APHA developed the Community Health Worker Special Primary Interest Group (CHW SPIG). In 2009, CHW SPIG published a policy recommendation that urges CHWs and policymakers to create "common definitions and nationally recognized standards of core competencies for CHW practice, based on an updated understanding of core CHW roles" (American Public Health Association, 2009, para 28).

In addition, the Bureau of Labor Statistics added a unique CHW Standard Occupation Code that supports the recognition and legitimacy of the CHW workforce (Office of Management and Budget, 2010). In 2015 the Center for Disease Control and Prevention published a policy brief supporting the utilization of CHWs in the prevention and treatment of chronic disease (Center of Disease Control National Center for Chronic Disease Prevention and Health Promotion, 2015).

Under the Affordable Care Act of 2010, and as a component of the triple aim of health reform, CHWs are acknowledged for their emerging role in addressing issues such as hospital readmissions, Patient Centered Medical Homes, and improving the health of underserved communities and the health care experience of their constituents (Bovbjerg, Eyster, Ormond, Anderson, & Richardson, 2013). In the backdrop of health care reform, there appears an opportunity for further integration of the CHW workforce within the health care system.

Healthcare professionals (doctors, nurses, social workers, administrators) serving marginalized and underserved groups are often ethnoculturally mismatched with their patients. In studies of provider/patient discordance, compared to white patients,

minority patients experience lower levels of trust and satisfaction and greater difficulty communicating with their provider. When given the choice, minority patients preferred to see providers of the same ethnicity and cultural background (Cook, Kosoki-Lasaki, & O'Brien, 2005). According to the Institute of Medicine (IOM), poor patient-provider relationships contributes to health disparities experienced by minority groups (Institute of Medicine, 2003).

Amborse et al. (2012) found that Native Hawaiians and other Pacific Islanders (NHOPI) are underrepresented in the physician workforce, with several communities having no NHOPI physicians to choose from. In an effort to redress this issue, The University of Hawaii's John A. Burns School of Medicine created *Imi Ho'ola*, a program to increase recruitment and graduation of physicians from underrepresented groups, including Native Hawaiians and Pacific Islanders. Considering the overall shortage of the physician workforce in Hawai'i (Withy, Dall & Sakamoto, 2010), in addition to the underrepresentation of NHOPI in the physician workforce, more needs to be done to increase healthcare provider capacity, especially for minority status groups.

Although CHWs are not physician substitutes, they are well positioned to address ethnocultural discordance between providers and patients. A defining characteristic of CHWs is their membership in the communities they serve. They often share cultural ties, language, and life experiences with their patients and serve as effective brokers between minority individuals and race-discordant health providers. Building capacity and use of CHWs in Hawai'i may serve to mitigate the problematic impacts of provider/patient discordance.

Nationally, the CHW workforce is largely comprised of minority (62%) women (82%), ages 30-50 (55%). Education levels range from a high school diploma (35%), some college (20%), 2-year degree (7%) and 4-year degree (31%) (U.S. Department of Health and Human Services Health Resources and Services Administration Bureau of Health Professions, 2017). Belonging to this demographic places CHWs firmly in the communities they serve (e.g. insider status); it also presents a major challenge. While CHWs have been utilized for decades, they have yet to enjoy the profession status and economic benefits of others healthcare workers, such as doctors, nurses and social workers. Instead, CHWs continue to hold subordinate roles and low wages within the

healthcare workplace, and often experience feelings of being marginalized and undervalued. Standardized training has helped these other professional groups legitimize their standing in the healthcare workforce. In a survey of New York CHWs and employers, 92% of employers wanted to hire CHWs who have completed a standardized training program, and 80% of CHWs were interested in completing formal training if it were available (Findley et al., 2012). Measures that demonstrate an elevated profession include, higher wages, greater responsibilities and scope of care, and recognition and respect shown by other healthcare professions. As standardized and stakeholder-sanctioned CHW training programs are developed and implemented, it is important to measure the impact such trainings have on the careers of individual CHWs and the profession as a whole.

The IOM noted inconsistencies in CHW training, roles, scope of practice, and qualifications as barriers to CHW integration into the health care system (Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care, 2003). In fact, most CHWs have gained their skills on the job (usually in community-based health and social service agencies) and lack formal college training in the CHW field (U.S. Department of Health and Human Services Health Resources and Services Administration Bureau of Health Professions, 2007).

Consensus is building within the CHW profession and stakeholder groups on CHW roles, scope of care, and training (Mason et al., 2011). An iterative process to define the CHW field began in 1998 with the publication of the first national survey of the CHW workforce (Rosenthal et al., 1988), followed by an update in 2007 (U.S. Department of Health and Human Services Health Resources and Services Administration Bureau of Health Professions, 2007). Continuing to build upon this work, the CHW Core Consensus (C3) Project released a progress report in 2016 outlining CHW core roles and skills endorsed by the wider CHW and stakeholder communities (Rosenthal, Rush, & Allen, 2016). The C3 report marked a critical step in the movement toward a nationally recognized set of core competencies on which to build standardized training programs and stable reimbursement streams.

A lack of stable funding for CHW services has hampered its potential to close health disparity gaps experienced by minority and disenfranchised populations. CHW

allies are advocating for greater integration of CHWs into the United States health care system, especially in primary care (Balcazar et al., 2011), with the hope of more secure funding. Several states and municipalities have developed training programs that have contributed to increased health care integration and reimbursement for CHWs.

Minnesota's standardized CHW training and certification program is one such example. With the goal of providing greater recognition, wider utilization, and stable funding for CHW services in Minnesota, several stakeholder groups coalesced to develop the Minnesota Community Health Worker Alliance in 2004. The alliance defined CHW roles and scope of care and then developed a statewide standardized CHW training program in higher education that resulted in a state-issued CHW certificate that allows CHW enrollment as Medicaid providers under Minnesota's Health Care Programs (Crum, 2012). As of 2012, seven states had laws authorizing Medicaid reimbursement for a variety of CHW services (Centers for Disease Control and Prevention, 2013). It appears there is increased community interest in developing standardized CHW core competency training programs to assist in moving the profession toward greater legitimization, health care integration, and the promise of more reliable funding sources, such as Medicaid.

The Current State of College Delivered CHW Training Programs

Currently, CHWs acquire training in a number of settings, including on-the-job, through state agencies, and colleges. The length and content of training provided to CHWs across the nation vary widely. Some CHWs enter the field with little or no formal training, while others complete college certificates totaling as many as 20 college credits. As of December 2016, 15 states had either established, or were moving toward, formalizing training requirements for CHWs (London, Carey, & Russell, 2016).

CHWs and stakeholders recommend offering credit-based training programs when feasible (Balcazar et al., 2011; Catalani, Findley, Matos, & Rodriguez, 2009; Rosenthal et al., 1998). Over the last two decades, colleges have increasingly been developing and offering credit-based CHW training programs, which opens academic pathways into fields such as social work and public health. Community colleges are particularly suited to providing training to the unique needs of the CHW profession. CHWs tend to be members of minority and disenfranchised groups that are less likely to

attend and/or succeed in college due to individual (e.g., English language proficiency) and environmental (e.g., transportation) challenges. Unlike traditional four-year universities, community colleges are uniquely suited for these non-traditional students, with open-door enrollment policies and remedial academic support. Based on reviewing the impact of CHW training and certification programs in 17 states, Kash, May & Tai-Seale (2007) recommended initiating community college delivered training in order to create vertical mobility and career advance within the CHW profession.

In 2015, I completed a systematic search of peer-reviewed articles that described and/or evaluated college-delivered CHW training programs. Twelve of the seventeen colleges included in the systematic review relied on community input to inform program and curriculum development. These collaborative relationships served critical functions, including identifying unique community and CHW workforce needs, informing the development and refinement of curriculum, recruiting participants, and providing community spaces to offer classes. Community health centers (CHC) were most commonly identified as partners (Dumbauld, Kalichman, Bell, Dagnino, & Taras, 2014; Ruiz et al., 2012; Farrar, Morgan, Chuang, & Konrad, 2011; Kash et al., 2007), followed by community- based agencies (Proulx, D.E., 2000; Bate-Ambrus et al., 2015; Wennerstrom, Johnson, Gibson, Batta & Springgate, 2014), and government agencies (Hites et al., 2012).

Nine articles describing and evaluating 17 such programs across the United States were identified (Table 1.1). Eight college programs developed curricula that focused on CHW core competencies (Love et al., 2004; Ruiz et al., 2012; Farrar et al., 2011; Kash et al., 2007; Proulx, 2000; Bate-Ambrus et al., 2015; Wennerstrom et al., 2014), and nine provided training specific to a given setting (e.g. emergency preparedness, Hites et al., 2012) or skill (e.g. research skills, Dumbauld et al., 2014). While CHWs and allies prefer training that provides college credit, only four of eight programs delivering core competency training also offered college credit (Love et al., 2004; Farrar et al., 2011; Proulx, 2000; & Bate-Ambrus et al., 2015). All four credit-bearing programs were administered at community colleges, while the other four non-credit programs were administered through 4-year institutions (Ruiz et al., 2012; Kash et al., 2007; Wennerstrom et al., 2014).

Table 1.1. Systematic review of college delivered CHW training programs

Citation	College/ University	Acronym	State	Evaluated	Curriculum Focus		Credit Bearing
					Core	Specialization	
(Love et al., 2004)	City College of San Francisco	CCSF	California	✓	✓	Substance Abuse, HIV/STD Educator, Interpreter	✓
(Dumbauld et al., 2014)	University of California CTRI	UCCTRI		✓		Research	
(Ruiz et al., 2012)	New York University	NYU	New York	✓	✓	Research	
(Farrar et al., 2011)	City College of New York	CCCNY		✓		Medical Admin Assistant	✓
	University of Alaska Fairbanks	UAF	Alaska		✓		✓
	Bunker Hill CC	BHCC	Massechusetts			Interpretation	✓
	Leeward CC	LCC	Hawaii			Admin Support in Health	✓
	Northern Arizona University	NAU	Arizona			Health Promotion	✓
(Hites et al., 2012)	Dine CC	DCC		✓		Emergency Preparedness	✓
(Kash et al., 2007)	Arizona CC	ACC1			✓		
	Connecticut Three Rivers CC	CTRCC	Connecticut			Health Outreach	
	Florida Golf Coast University	FGCU	Florida			Family Development, Health Outreach	
	Portland CC	PCC	Oregon			Capacitation of CHWs	
	Texas CC	TCC	Texas		✓		
(Proulx, 2000)	Arizona CC	ACC2	Arizona	✓	✓		✓
(Bate-Ambrus et al., 2015)	South Suburban College	SSC	Illinois		✓		✓
(Wennerstrom et al., 2014)	Tulane University	TC	Louisiana	✓	✓		

Evaluation outcomes were reported for 10 of the 17 training programs (Table 1.2), and all utilized non-experimental research designs. Evaluators most commonly used pre/posttests to measure knowledge acquisition (n=4, Love et al., 2004; Dumbauld et al., 2014; Ruiz et al., 2012; Hites et al., 2012), followed by participant satisfaction with the training (n=3, Dumbauld et al., 2014; Ruiz et al., 2012; Wennerstrom et al., 2014),

and participant confidence in applying knowledge and skills taught (n=3, Ruiz et al., 2012; Hites et al., 2012; Wennerstrom et al., 2014). Questionnaires were the most commonly utilized method of data collection, followed by individual interviews and focus groups.

Table 1.2. Evaluation results of college programs reviewed

College/ University	N	Quantitative Measures	Qualitative Measures	Follow-up Measures	Results
CCSF	286	Student Retention, Positive Career Outcomes, Pre/Post Test, DACUM	Stakeholder Surveys and Focus Groups	1 Year phone survey positive career outcomes	84% Student Retention, + Career Outcomes, + Pre/Post
UCCTRI	13	Post Test	Student Satisfaction Survey, Community Focus Groups		+ Student Satisfaction, +/- Post Test
NYU	12	Pre/Post Test, Student Demographics	Student Satisfaction Survey, Student Perception of Competence Survey		+ Student Satisfaction, + Pre/Post Test
CCNY	50	Student Demographics, Student Self Report Impact of Training	Key Informant, CHW Supervisor, CHW Interviews, Focus Groups	Follow-up Survey year 3	67% received raises, 21% promoted, 46% college credit, 31% credential or certificate
UAF					
BHCC	52				
LCC	70				
NAU	18				
DCC	101	Pre/Post Test			+ Pre/Post Test
TU	35	Student Demographics	CHW and Supervisors Survey, Student Satisfaction Survey	6 month post-training	+ Student Satisfaction

All four studies that utilized pre/posttests to measure knowledge acquisition reported statistically significant improvement in posttest scores, and their samples sizes ranged from 12 to 286 participants. Evaluators reported positive outcomes for all 10 programs, including improved self-efficacy, increased CHW knowledge and skills,

promotions and raises, and increased confidence in participating in future college courses.

The career outcomes of students were measured in two of the ten studies (Love et al., 2004; Farrar et al., 2011). The City College of San Francisco (CCSF) administered phone surveys one year following graduation from the program (Love et al., 2004). The second study reported on the implementation and impact of 5 separate CHW training programs involved in the *Jobs to Careers* initiative. Training participants completed a written survey at the beginning and end of a three-year grant period (Farrar et al., 2011). Common measures taken across both studies included wage increases and promotions for incumbent (already employed) workers, job placement, and continuing as a college student. The *Jobs to Careers* study also conducted individual interviews with employers of training participants and reported barriers and facilitators to college-delivered CHW training (Farrar et al., 2011).

Programs that utilized quantitative data (e.g., student pre/posttests) alongside qualitative data (e.g., employer interviews) were able to triangulate outcomes, providing the most compelling evidence of the quality and impact of CHW training programs on students and employers. Overall, the literature review found that college-developed, delivered, and evaluated CHW training programs yielded promising results.

Several colleges included in the review developed training programs with consideration for the unique characteristics of the CHW workforce. CHWs tend to be members of minority and disenfranchised groups that are less likely to attend and/or succeed in college. Individual (e.g., English language proficiency) and environmental (e.g., transportation) challenges to student success were identified and used to inform teaching and assessment strategies. While colleges have historically assessed student learning through traditional methods such as standardized multiple-choice tests, non-traditional students perform poorly on these measures. Two programs reviewed were reported to assess students' ability to apply the attitudes, skills and knowledge of the CHW profession through performance-based assessment tools, such as case-based scenario exams (Hites et al., 2012) and performance-based mock interviews (Love et al., 2004). These teaching and assessment strategies appear to have benefited the non-traditional CHW students in programs reviewed. Introducing college coursework

through programs that consider the unique needs of the CHW population appears to open a door to higher education for some which might not occur otherwise. Considering the recommendations made by the IOM for a more diversified health care workforce (Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care, 2003), college CHW training programs may fill an important need in attracting diverse populations to pursue career pathways in health care.

Despite the encouraging returns reported from programs included in this systematic review, it is not clear if this accurately reflects the quality, content, pedagogy and development of the majority of programs across the nation. In addition, this review found a wide variation in the quality of data collected for program evaluation, with 5 out of 10 programs judged to have poor program evaluation designs. This indicates a need to increase the quantity and quality of published peer-reviewed articles evaluating college CHW training programs.

The University of Hawai‘i Maui College CHW Certificate Program

Through support from a Trade Adjustment Assistance Community College Career Training (TAACCCT) round IV grant, in 2015 the University of Hawai‘i Maui College (UHMC) initiated the development of a CHW Certificate Program (UHMC-CHW) to be offered in Maui County and later disseminated to three other University of Hawai‘i Community College campuses. The certificate is made up of 5 courses: CHW Fundamentals, Counseling & Interviewing, Case Management, Health Promotion/Disease Prevention (HPDP), and a Capstone Practicum. The certificate can be completed in one year, although students move through the program at their own pace. Students earn 15 college credits, which can ladder to UHMC’s Associates in Human Services and a planned Kapiolani Community College Associates in Public Health. The courses follow a progression of the core attitudes, skills, and knowledge of the CHW profession, from basic understanding of the core competencies taught in CHW Fundamentals (e.g. ethics and cultural humility), to the Capstone Practicum, where students are placed in clinical and community-based agencies, to apply knowledge and skills learned in class to the field. CHW Fundamentals and HPDP are courses specific to the UHMC-CHW in content and participants, while the other three courses within the certificate are generalized to the UHMC Human Services Associate in Science.

Two resources critical to the initial development of the UHMC-CHW included the CHW-National Education Collaborative (CHW-NEC) guidebook (Arizona Area Health Education Centers Program Community Health Worker National Education Collaborative, 2008), and the CHW Core Consensus Report (C3) (Rosenthal et al., 2016). In 2004, a grant from the U.S. Department of Education's Fund for the Improvement of Postsecondary Education was awarded to the University of Arizona Area Health Education Centers Program to "explore the best approaches for college-supported CHW-responsive education" (Arizona Area Health Education Centers Program Community Health Worker National Education Collaborative, 2008, preface p. 2). The CHW-NEC was formed to complete the grant aims and included 15 adapter colleges and 6 supportive technical assistance colleges. A guidebook for developing college-supported CHW education programs was published in 2008 that outlined promising practices for curriculum development and pedagogical design. According to their recommendations, programs should engage local employers, stakeholders, and experienced CHWs during curriculum development to assure the content reflects the needs of the community. Programs need to eliminate barriers to program admission, including college prerequisites. The curriculum should address the core competencies of the profession, and students should be evaluated using a performance-driven assessment process. Programs should be student-centered, with courses offered at times and in locations that meet the needs of participants, develop prior learning for credit, and use popular education/adult learning instructional approaches (Arizona Area Health Education Centers Program Community Health Worker National Education Collaborative, 2008). CHW-NEC's recommendations served as a blue print for creating a college delivered training program at UHMC that is responsive to the unique needs of CHWs in Hawai‘i (Table 1.3).

Table 1.3. CHW-NEC recommendations utilized in UHMC-CHW development

Program Development	Engaging active/ experienced CHWs and employers as advisors to program development
	Starting with an entry-level basic certificate program
	Avoiding pre-requisite requirements for admission to an entry-level basic course of study
Curriculum Design	Evaluating existing college courses to support the CHW curriculum
	Integrating a performance-driven assessment process
Instructional Approaches	Using flexible scheduling like block scheduling and weekend classes
	Providing instruction which is student-centered
	Integrating popular education/adult learning approaches into instruction
	Assessing prior learning for credit

The C3 is acknowledged by CHWs and stakeholders nationwide, and describes the qualities, roles and skills that make up the core competencies of the CHW profession (Rosenthal et al., 2016). The UHMC-CHW is designed to teach the 11 core skills outlined in the C3 Core Consensus Report (Table 1.3).

Table 1.4. C3 core skills addressed in UHMC-CHW courses

C3 Core Skills	UHMC-CHW Courses
Communication	CHW Fundamentals; Counseling & Interviewing
Interpersonal and Relationship-building	CHW Fundamentals; Counseling & Interviewing
Service Coordination and Navigation	Case Management
Capacity Building	All
Advocacy	All
Education and Facilitation	HPDP
Individual and Community Assessment	Case Management; HPDP
Outreach	CHW Fundamentals; HPDP
Professional Skills and Conduct	All
Evaluation and Research	HPDP
Knowledge Base	All

UHMC-CHW development began in the spring of 2015, and course offerings started in the fall 2015. Figure 1.1 outlines the iterative process of refining the curriculum across three cohorts through regular feedback from students in the form of weekly class surveys and interviews and focus groups with employers and incumbent

CHWs. Information collected led to several program improvements, including refining pedagogical approaches, recruiting greater numbers of incumbent workers, increasing community practicum sites, adding more course content in advocacy, and incorporating more community guest speakers.

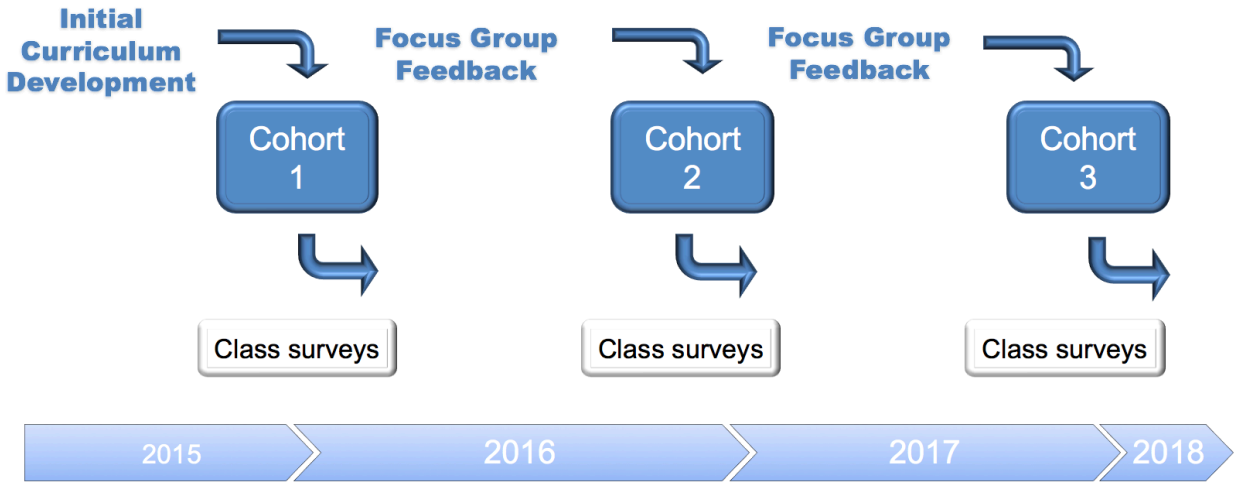

Figure 1.1. UHMC-CHW Program Development Process

Research Goals

My long-term goal is to contribute to the increased integration and utilization of CHWs in healthcare and social services through the dissemination of a statewide, standardized CHW training program. The objective of this dissertation was to evaluate the effectiveness of the UHMC-CHW in providing core competency training for CHWs. The central hypothesis was that CHW training developed and delivered from a process grounded in the promising practices of other programs, along with ongoing input and support from the community, would provide effective core competency training to CHWs in Hawai‘i that would be accepted by CHWs and stakeholders (Figure 1.2).

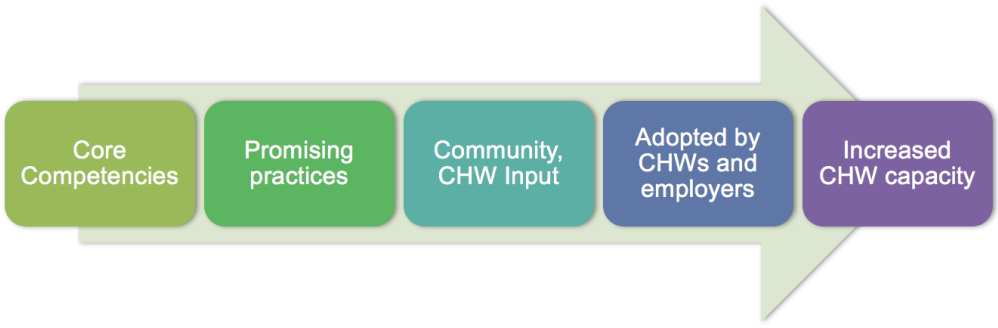

Figure 1.2. Central Research Hypothesis

Conceptual Framework

The Center for Disease Control's Framework for Program Evaluation in Public Health (CDC-FPEPH) provided a comprehensive guide to planning, implementing, and utilizing evaluation as a tool for program improvement across the range of public health practice (U.S. Department of Health and Human Services Centers for Disease Control and Prevention, 2011). To assure comprehensive and meaningful evaluation results, this evaluation addressed the 6 steps outlined in the CDC-FPEPH (Figure 1.3). The first two steps, *Engaging Stakeholders*, and *Describing the Problem* are discussed in the Introduction section, while methods to *Focus the Evaluation*, *Gather Credible Evidence*, *Justify Conclusions,* and *Use and Share Lessons Learned* are reported in the following methods sections of the three planned studies.

Figure 1.3. CDC-FPEPH (Centers for Disease Control and Prevention, Program Performance and Evaluation Office, 2016)

A second conceptual framework, Targeting Outcomes of Programs (TOP), informed the incorporation of program evaluation into program development and planning processes (Figure 1.4). This is a hierarchal model that conceptualizes program development and performance (i.e. implementation) as mirror images of each other, allowing for the identification and targeting of outcomes across both stages of a program (Rockwell, Albrecht, Nugent, & Kunz, 2012).

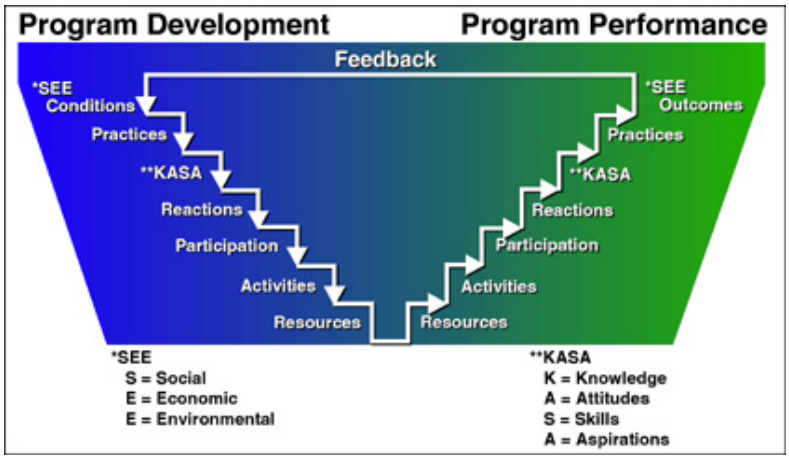

Figure 1.4. TOP Model (Rockwell & Bennett, 2004)

A program logic model provides a picture of the critical components (i.e. inputs and outputs) assumed necessary to achieve the desired outcomes and impacts of a program. This model represents the sequence of activities that build upon each other to reach intended objectives (Tolley, Ulin, Robinson, Mack, & Succop, 2016). By placing TOP within a logic model framework (Figure 1.5), one can see the progression of steps taken to develop the curriculum and recruit participants (Inputs), implement the program and gather participant/employer feedback (Outputs), and measure anticipated proximal (Learning and Action) and distal (Impact) outcomes expected to occur as a result of programs activities. Environmental factors outside the program can serve to either help or hinder student success. These barriers and facilitators can exist within the larger college system, employers, and students' personal life.

Each of the three studies in this dissertation focused on different stages of the logic model. Combining these results produced an evaluation of both the implementation of program activities and the impact those activities have had on participants.

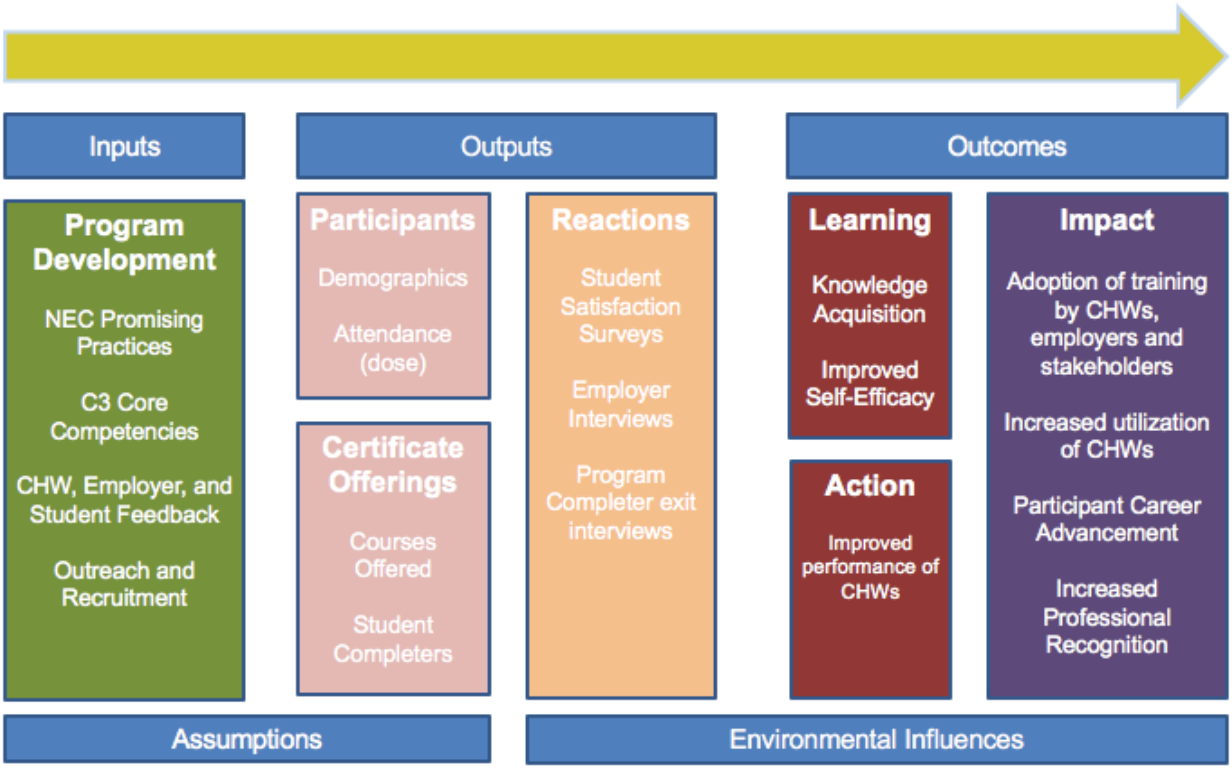

Figure 1.5. Logic Model – Adapted from the TOP Evaluation Model (Barkman, 2002)

Study 1 utilized a pre/posttest survey to measure participants' satisfaction of the program in meeting their professional needs (Figure 1.5 *Reactions*) and the effectiveness of the UHMC-CHW courses to teach core roles and skills and improve their confidence in applying these in the field (Figure 1.5 *Learning*). Participant satisfaction was determined at posttest based on four Likert-scored items. Knowledge acquisition was measured by comparing students' pretest and posttest performances on a 15-item multiple choice knowledge test. Changes in confidence was measured by students' responses to a five-item, Likert-scored scale asking them to estimate change in confidence from the start and end of the course (i.e. retrospective posttest).

Study 2 explored CHW employer perspectives of the effectiveness of the UHMC-CHW in preparing new and incumbent CHWs for the workforce in Hawai'i (Figure 1.5 *Action*). A qualitative analysis was conducted on data collected from individual interviews with practicum supervisors of certificate students and supervisors of incumbent workers participating in the certificate program, to determine the degree to which the training adequately prepared students for the profession.

Study 3 utilized a quantitative online survey to measure the impact the training had on the careers of certificate completers, including career advancement, increased professional recognition and skills improvement (Figure 1.5 *Impact*).

Community Partners

To assure the UHMC-CHW is relevant and effective in meeting the needs of CHWs in Hawai‘i, and in accordance with the CDC-FPEPH, community involvement has been central in developing and evaluating the program. Several community partners emerged from the initial stages of development and have continued through evaluation. Lāna‘i CHC and Na Pu‘uwai (Molokai’s Native Hawaiian Health Center) are designated community partners in the TAACCCT IV grant. They have supported the program through initial and ongoing feedback on the curriculum, as well as providing practicum placements for certificate students.

Before launching the certificate program in Fall 2015, Program Specialist, Selene LeGare, contacted agencies in Maui County to determine which of the 11 C3 skills were most important for local CHWs. Key informant interviews were conducted with supervisors and directors from 24 organizations in clinical, community-based and government settings. Employers were asked a series of questions, including the number of CHWs employed in their agencies, the title of these positions, and the skills essential to performing the CHW role. Interviews were recorded using written notes taken by the interviewer and then entered into an *Excel* spreadsheet for analysis. A report was generated that ranked the C3 skills in order of importance to employers (LeGare, 2016), and this provided the basis for the prioritization of skills taught in the curriculum. During this process, a number of agencies expressed interest in participating in ongoing curriculum feedback activities and offering student practicum placements, including Mālama I Ke Ola (Maui’s Community Health Center), Hui No Ke Ola Pono (Maui’s Native Hawaiian Health Center), the Maui District Health Office, Maui Family Support Services, Mālama Family Recovery Center (gender-based residential substance abuse treatment center), and the Family Life Center (homeless shelter). These agencies remained engaged and supportive of the program and its students.

Community feedback regarding the development and evaluation of the program was collected from a number of formal activities. First, upon completing the first cohort

of classes in the Spring 2016, community feedback was collected from employer and CHW focus groups during the Summer 2016. Employers provided feedback on *Study 2* interview questions, and students helped design the final draft of the survey for *Study 3*. Program feedback collected from incumbent CHW study participants in *Studies 1 & 3* and from CHW employers in *Study 2* assured community members were primary evaluators of the program. A summary of findings from this program evaluation will be shared with community partners, CHWs, and stakeholders in print and presentation formats.

CHAPTER 2

A SURVEY OF STUDENT SATISFACTION, LEARNING AND CONFIDENCE

Abstract

In the U.S., health disparities persist, with whites significantly outliving most minority groups (Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care, 2003). CHWs improve health outcomes for minority patients (Swider, 2002), yet the lack of standardized training hampers efforts to fully integrate them in the healthcare system. This study measured student knowledge and confidence gained after participating in courses provided through a competency-based, credit-bearing, CHW certification program at the University of Hawai‘i Maui College (UHMC). Results indicated that, on average, students significantly improved knowledge of and confidence in applying core CHW competencies. Additionally, the program was able to recruit and retain students from ethnic minority groups that mirrored the community of patients served by Hawai‘i CHWs.

Introduction

In the U.S., health disparities persist, with whites significantly outliving most minority groups (Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care, 2003). CHWs improve health outcomes of minority patients by increasing access to needed healthcare services (Swider, 2002) and improving communication between patient and provider (National Center for Chronic Disease Prevention and Health Promotion, 2013). There is increasing interest among providers, healthcare systems, and governmental agencies to further integrate CHWs into the healthcare system. The lack of standardized training hampers efforts to include CHWs in formalized healthcare services, a critical step in sustainable funding. Programs that are evaluated to be effective in teaching the CHW core competencies outlined by the C3 report provides a standard that the healthcare system can more readily support.

In searching the peer reviewed literature evaluating college-delivered CHW training programs, five articles provided evaluation outcomes on ten programs (Table 1.2). The most common program evaluation tool utilized was pre/posttests measuring student learning (n=4, Love et al., 2004; Dumbauld et al., 2014; Ruiz et al., 2012; Hites

et al., 2012), and these authors found significant improvement in posttest scores utilizing paired t-test analysis. The next most common measurement tool was the student satisfaction survey (n=3, Dumbauld et al., 2014; Ruiz et al., 2012; Wennerstrom et al., 2014), and students in all of these studies were found to be satisfied with the training. Two programs (Wennerstrom et al., 2014; Ruiz et al., 2012) identified increased levels confidence among some participants in applying the knowledge and skills taught. However, these data were collected through post course interviews with students, rather than surveys. No evaluations were found to report quantitative measures of student self-rated improvement of confidence in applying the knowledge and skills taught.

Following the logic model discussed in Chapter 1, and prior CHW training program evaluations, this study administered a quantitative survey to UHMC-CHW students to measure their satisfaction with the training (Figure 1.5 *Reactions*), and change in knowledge of the core knowledge and skills taught in certificate courses (Figure 1.5 *Learning*). Additionally, missing from the previous evaluations reviewed, this survey attempted to quantify confidence gains in applying newfound knowledge and skill to the field (Figure 1.5 *Learning*). Based on Bandura's construct of self-efficacy (1997), confidence is a critical element in learning and performance. Nursing students who reported increased confidence in applying new skills also demonstrated improved performance in the field (Harder, 2010).

Thus, my study addressed the following research questions: Do UHMC-CHW certificate courses improve student knowledge of and confidence in applying the CHW core roles and skills taught in class? How satisfied are students with these courses to fulfill their professional training needs?

Methods

Study Design

This study used a quantitative pre-experimental, one-group design. Through the use of an online survey, knowledge acquisition was measured from questions given to students prior to the start of (pretest) and after completion of (posttest) two CHW certificate courses. A confidence measure was collected only during the post-

intervention survey, asking students to rate their confidence retrospectively (at the beginning of the course) and in the present (at the end of the course). A series of student satisfaction items were also included in the posttest survey (Figure 2.1). Participant exposure to the CHW Certificate courses was the independent variable, and the three dependent variables were change in knowledge, change in confidence, and post-course satisfaction.

An online survey was chosen over a written format for three reasons. First, classes were held in a room where students had individual access to a computer, making it easy for students to access and complete. Second, response accuracy and completeness were improved by allowing only one response per knowledge question and requiring students to answer each question before moving on. Third, it is believed that students would feel more confident in their anonymity, because students did not turn in paper surveys to the front of the class and there were no hand written qualitative answers, both reducing the risk that the instructor could link answers to a specific student. The survey was created and administered using the online service, *Survey Monkey*, for its ease of use and inclusion of the features necessary to assure anonymity of responses.

The use of a control group was considered in the design of this study to provide a comparison to those completing the training. In reviewing 9 published studies evaluating CHW training programs, it was discovering that none used control groups in their design, likely due to the practical challenges posed in recruiting control group participants when piloting small, time-constrained, grant-funded curricula. This study ultimately opted not to use a control group due to time and resource limitations and ethical concerns in denying the CHW training to control group participants. The impact of this decision is discussed in the *Limitations* section.

Sample

Survey participants were recruited from the population of students who completed CHW Fundamentals in the Fall 2017 (n=27) and Health Promotion / Disease Prevention (HPDP) in the Spring 2017 (n=22). Participants were unique across courses,

and the completion rate of both pre- and posttest surveys among all students finishing these courses was 94% (n=49 of 52).

Measures

The online pre/posttest survey was designed (Figure 2.1) to collected data on variables in 3 logic model domains (Figure 1.5), including *Participants* (demographics), *Reaction* (student satisfaction) and *Learning* (i.e. knowledge acquisition, confidence). Pre- and posttests administered in CHW Fundamentals and HPDP courses can be found in Appendix A.

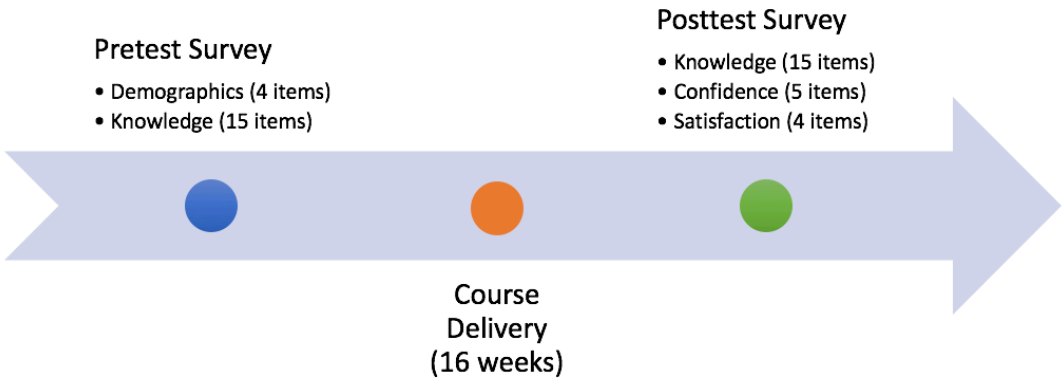

Figure 2.1. Pre/Posttest Survey Design

Participants/demographics. Multiple choice questions collected participants' age (18-29, 30-39, 40-49, 50-59, 60+), ethnicity [Hawaiian, White/Caucasian (including European, German, Irish, Italian, English), Chinese (including Taiwanese), Filipino, Japanese (including Okinawan), Korean, Vietnamese, Asian Indian, Other Asian (including Laotian, Thai, Malaysian), Samoan/Tongan, Guamanian/Chamorro, Other Pacific Islander (including Polynesian, Micronesian, Fijian), Black/African American, Native American/Aleut/Eskimo/Inuit, Puerto Rican, Mexican, Portuguese,], education [High school degree or equivalent (e.g., GED), some college but no degree, Associate degree, or Bachelor degree)], and years of CHW Work experience (0, <1, 1-3, or 3+).

Reaction/student satisfaction. Four items measured this construct at posttest: 1) How satisfied are you with this course in meeting your professional training needs?, 2) How satisfied are you with the way the instructor taught this course?, 3) Overall, how satisfied are you with this course?, and 4) How likely is it that you would recommend this course to a friend or colleague? Each was measured on a 5-point Likert Scale, from

1=not at all satisfied (likely) to 5=extremely satisfied (likely). An overall satisfaction score was calculated by adding all 4 items, with a possible range from 4=not at all satisfied on all items to 20=extremely satisfied on all items.

Learning/knowledge acquisition. There were 15 multiple choice (1=correct, 0=incorrect) items specific to each course (Appendix A) that measured student knowledge acquisition. The C3 established a comprehensive list of the 10 core roles and accompanying 11 skills of the CHW profession that are widely accepted across CHWs and stakeholders nationwide (Rosenthal et al., 2016). This list was central in the development of the CHW Certificate courses and informed the content of the survey knowledge measures. Questions were in multiple-choice format, which is consistent with educational assessments found in prior college CHW training evaluations.

Following the CHW-NECs recommendations to adapt material to meet the needs of adult learners (Arizona Area Health Education Centers Program Community Health Worker National Education Collaborative, 2008), several questions were contextualized within a scenario. For example, instead of asking participants to choose the correct definition of “professional boundaries”, they are asked to determine how a CHW should respond to a situation (i.e. John is a CHW who has established a close relationship with a patient. The patient requested to friend (i.e. add) him on Facebook. John should...). Items in this section were summed to create a knowledge score for pre/posttest comparison. Unanswered items were scored as incorrect. A composite knowledge score, calculated by adding the number of correct items, had a possible range of 0=no correct answers to 15=all correct answers.

Confidence. Included in the posttest were 5 items that measured participants’ confidence in their ability to apply knowledge and skills taught during the course. Specifically, participants were asked to self-rate, along a 5 interval Likert scale (1=not at all confident to 5=completely confident), their confidence prior to, and after completing the course to: 1) Explain who CHWs are and what they do; 2) Practice cultural humility when working with people of other cultural backgrounds; 3) Help someone in your community understand health insurance; 4) Identify the social determinants of health that affect individuals in your community; and 5) Maintain healthy boundaries with those

you help. Pre- and posttest items were summed to create a confidence Likert scale score with a possible range of 5=not at all confident, to 25=completely confident.

These items were adapted from the *University of Southern Mississippi Self-Efficacy/Behavior Instrument for Objectives of CHAN Training Survey* included in the *Community Health Worker Evaluation Toolkit (*The University of Arizona Rural Health Office and College of Public Health, 2000*)*. However, unlike Southern Mississippi's tool, this survey utilized a retrospective pretest design, where students were asked to rate their confidence retrospectively (prior to the course) and presently (at the end of the course). This design was chosen in an effort to avoid a phenomenon known as the *response-shift effect*, where participation in an intervention changes the frame of reference for participants (Lamb, 2005). Primary to educational interventions, students are expected to learn unfamiliar terms and concepts. Confidence items in this survey referred to terms, such as *cultural humility*, that participants were not likely to have fully understood prior to taking the course. Answering these items prior to taking the course would have elevated the potential for an inaccurate self-rating score. The decision to ask for pre-intervention confidence scores after participants have been exposed to the course stemmed from the belief that increased understanding of the material would increase the validity of baseline confidence scores.

Procedures

At the start of the first class, students were asked if they were willing to consent to participate in this study by completing a 15-minute survey. A *Consent to Participate* statement was included at the beginning of the survey (Appendix A). To assure anonymity, participants created a unique identifier. This coding system allowed for anonymity of responses while also allowing for this researcher to match pretests and posttests for analysis. Students participated in the online pretest survey during the first 15 minutes of the first course (HPDP, 1/11/17; CHW Fundamentals, 8/24/17) and the posttest surveys during the last 15 minutes of the last class (HPDP, 4/27/17; CHW Fundamentals, 12/07/17). This study was approved by the University of Hawai‘i Institutional Review Board.

Data Analysis

Data was managed and analyzed using *Microsoft Excel* and *SPSS* (version 23.0; SPSS, Inc., Chicago, IL). Individual responses were downloaded from *Survey Monkey* in *Excel* format. Pre/posttest knowledge and confidence composite scores were calculated in *Excel* prior to transferring data to *SPSS* for further analysis. To evaluate the ability of the program to reach all student groups, the five original demographic categories were conflated into the following dichotomous variable to allow for comparison: 1) Age (18-39, 40+), 2) Ethnicity (NHOPI, non-NHOPI), 3) College (no degree, degree), 4) CHW work experience (<1y., >1 y.), and 5) Course (Fundamentals, HPDP). A Chi-squared test was calculated to determine if there were significant associations between these characteristics, for example, if the age and education distributions were similar in the two courses – CHW Fundamentals and HPDP. Paired *t* test scores were estimated to determine statistically significant improvement in knowledge and confidence scores for students as a whole and by selected student characteristics, for example, prior CHW work experience and prior college experience. Lastly, a simple linear regression was performed to see if improvements in knowledge and confidence and post-course satisfaction held after controlling for differences across students in age, prior CHW work experience, and prior college experience.

Results

The findings include data from the 49 students who completed pre- and posttest surveys (Fundamentals, n=27; HPDP, n=22) over the course of the study. As shown in Figure 2.2, the ethnic makeup of students closely mirrors that of the state's CHC population (Hawai‘i Primary Care Association, 2016), which demonstrates cultural concordance between those being trained as CHWs and the population they will serve.

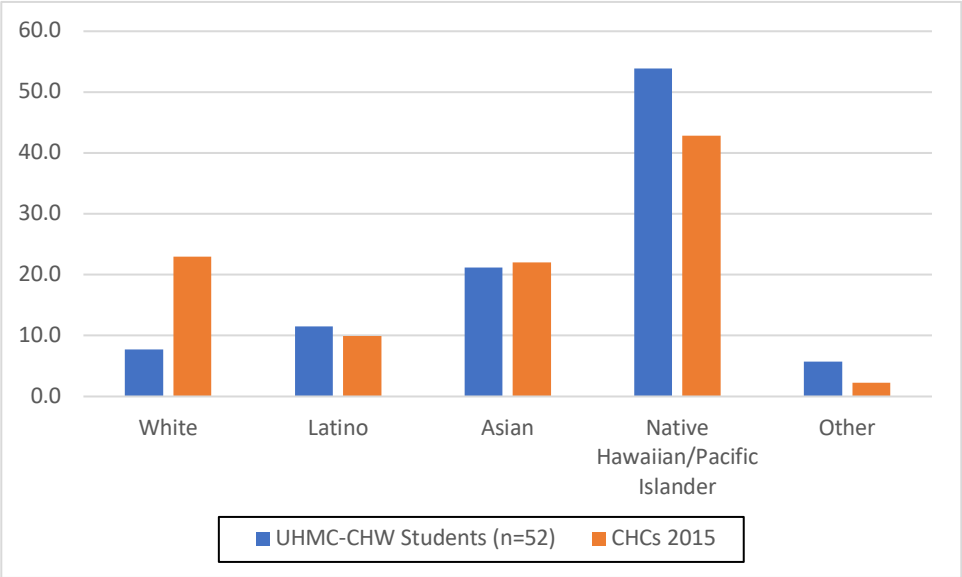

Figure 2.2. UHMC-CHW Student & Hawai‘i CHCs 2015 Population Ethnic Comparison

Further detail on student demographic characteristics are shown in Table 2.1. Females represented the vast majority of students (n=45, 91.8%). Students tended to be under the age of 40 (57.1%), without a college degree (75.5%), and evenly split between new (51.0%) and experienced CHWs, and of NHOPI (51.0%) and non-NHOPI ancestry. According to a Chi-squared test all categories were independent of each other, except that Fundamentals students were more likely to be <40y.o. and not have a college degree, compared to HPDP students.

Table 2.1. Characteristics of students completing pre/posttests

	Age n(%)		Ethnicity n(%)		College n(%)		Work n(%)		Course n(%)	
	18-39	40+	non-NHOPI	NHOPI	No Degree	Degree	<1y.	>1y.	Fundamentals	HPDP
Age										
18-39	28(57.1)		15(62.5)	13(52.0)	22(59.5)	6(50.0)	17(68.0)	11(45.8)	16(59.3)	12(54.5)
40+		21(42.9)	9(37.5)	12(48.0)	15(40.5)	6(50.0)	8(32.0)	13(54.2)	11(40.7)	10(45.5)
p value			.458		.565		.117		.740	
Ethnicity										
non-NHOPI	15(53.6)	9(42.9)	24(49)		17(45.9)	7(58.3)	13(52.0)	11(45.8)	13(48.1)	11(50)
NHOPI	13(46.4)	12(57.1)		25(51)	20(54.1)	5(41.7)	12(48.0)	13(54.2)	14(51.9)	11(50)
p value	.458				.456		.666		.897	
College										
No Degree	22(78.6)	15(71.4)	17(70.8)	20(80.0)	37(75.5)		20(54.1)	17(45.9)	24(88.9)	13(59.1)
Degree	6(21.4)	6(28.6)	7(29.2)	5(20.0)		12(24.5)	5(41.7)	7(58.3)	3(11.1)	9(40.9)
p value	.565		.456				.456		.016*	
Work										
<1y.	17(60.7)	8(38.1)	13(54.2)	12(48.0)	20(54.1)	5(41.7)	25(51)		18(66.7)	7(31.8)
>1y.	11(39.3)	13(61.9)	11(45.8)	13(52.0)	17(45.9)	7(58.3)		24(49)	9(33.3)	15(68.2)
p value	.117		.666		.456				.015*	

*p<.05

Knowledge and Confidence

According to paired t-test knowledge score calculations (Table 2.2), all students taken together had statistically significant improvement in knowledge scores (p<.01). Although students in all subgroups made gains, some groups' gains were significant at the p<.01 level (e.g., those who were age 40 or older, non-NHOPI, those with no college degree, and those with < 1 year of work experience), while others were significant at levels between .05 and .10. Students in both courses showed statistically significant improvement in knowledge scores.

Regression was used to see if any of these characteristics were associated with change in knowledge, controlling for differences in student characteristics. These findings suggest that student age was a significant predictor of knowledge change (in addition to participation in the course) in that older students (age 40+) were more likely to show gains that younger students (p<.05).

Table 2.2. Knowledge and confidence pre/post comparisons

	All	Age		Ethnicity		College		Work		Course	
		18-39	40+	non-NHOPI	NHOPI	No Degree	Degree	<1y.	>1y.	Fundamentals	HPDP
Knowledge											
Pretest	10.49	10.89	9.95	10.67	10.32	10.62	10.08	10.88	10.08	10.96	9.4
Posttest	11.94	11.79	12.14	12.63	11.28	12.16	11.25	12.68	11.17	12.89	10.75
Difference	1.45**	0.89	2.19**	1.96**	0.96	1.54**	1.17	1.80**	1.08	1.93**	1.35*
p Value	.000	.104	.000	.000	.074	.001	.073	.000	.072	.000	.036
Regression		.019*		.081		.757		.331		.255	
Confidence											
Pretest	12.47	12.00	13.10	12.29	12.64	12.51	12.33	9.92	15.13	11.7	13.41
Posttest	20.73	20.82	20.62	20.00	21.44	20.81	20.50	20.56	20.92	20.67	20.82
Difference	8.27**	8.82**	7.52**	7.71**	8.80**	8.30**	8.17**	10.64**	5.79**	8.97**	7.41**
P Value	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Regression		.768		.252		.661		.001**		.998	

*p<.05
**p<.01

Mean posttest confidence scores for students as a whole and for all ten subgroups significantly improved (p<.01). On the whole, students improved 8.26 points, from somewhat/moderately to very/extremely confident. New CHWs (<1y. work

experience) made the greatest confidence gains (10.64), while experienced CHWs (>1y. work experience) reported the least gains (5.79). Regression analysis findings suggest that work experience was a predictor of student confidence gains (p<.01), in that students with < 1 year of work experience gained more than students with > 1 year of work experience.

Table 2.3. Student Satisfaction

		Age		Ethnicity		College		Work		Course	
	All	18-39	40+	non-NHOPI	NHOPI	No Degree	Degree	<1y.	>1y.	Fundamentals	HPDP
1. Meeting training needs											
Mean	4.33	4.25	4.43	4.04	4.60	4.41	4.08	4.32	4.33	4.44	4.18
p value		.413		.007**		.197		.951		.225	
Regression		.522		.015*		.460		.845		.349	
2. Instructor teaching											
Mean	4.59	4.61	4.57	4.54	4.64	4.65	4.42	4.64	4.54	4.74	4.41
p value		.842		.578		.256		.578		.057	
Regression		.884		.634		.654		.931		.135	
3. Overall											
Mean	4.51	4.43	4.62	4.38	4.64	4.59	4.25	4.52	4.50	4.59	4.41
p value		.338		.176		.129		.919		.353	
Regression		.339		.279		.230		.936		.672	
4. Reccomend course to others											
Mean	4.61	4.57	4.67	4.46	4.76	4.70	4.33	4.60	4.63	4.78	4.41
p value		.592		.081		.066		.887		.033*	
Regression		.688		.127		.287		.462		.070	
Composite Score											
Mean	18.04	17.86	18.29	17.42	18.64	18.35	17.08	18.08	18.00	18.56	17.41
p value		.531		.066		.103		.906		.088	
Regression		.582		.107		.325		.804		.197	

*p<.05
**p<.01

Student Satisfaction

Students as a whole reported a high level of satisfaction, with a mean item score of 4.51 (very to extremely satisfied/likely). By subgroup, composite scores ranged from 18.64 for NHOPI students, to 17.08 for those with a college degree. The only subgroup difference was for the item “How satisfied are you with this course in meeting your professional training needs?” with NHOPI having statistically higher scores.

Discussion

Based on the findings of this study, this CHW training program appears to be attracting students that reflect the ethnic make-up of communities they will serve. Data also suggest that collectively students significantly improved their knowledge and confidence in applying the CHW core competencies taught in the Fundamentals and HPDP certificate courses. Students were satisfied with instructors and the courses meeting their training needs, and were likely to recommend the course to a friend or colleague. Program courses appeared to be effective in teaching the CHW core competencies, and raising the level of confidence students have in using their newfound knowledge and skills in the field.

The CHW Fundamentals and HPDP courses addressed different core competencies and were taught by different instructors, offering an opportunity to compare outcomes of knowledge, confidence, and satisfaction scores. Students in both courses scored significantly higher on mean posttest knowledge and confidence scores, and reported high levels of satisfaction, despite different instructors. It should be noted these instructors worked closely together to develop and implement the curriculum, and this appears to have provided a consistent student experience.

Student knowledge gains demonstrated in pre/posttest analysis and satisfaction with the program are consistent with prior program evaluations. Noteworthy is the significant increase students experienced in their confidence in applying what they have learned in the field. Believing in one’s abilities has long been linked to improved performance (Bandura, 1977). According to their own self-report, students finished courses with the confidence to effectively execute the core skills and roles of the CHW profession in their community. To the best of this researcher’s knowledge, this is the

first reported quantitative measure of student confidence gains in a college delivered CHW training program.

Differences in Outcomes Among Student Characteristics

Age, ethnicity, and college and work experience all appeared to play a role in student performance on knowledge tests. For example, students with less college and work experience made more gains in knowledge and confidence than students with more experience. At the same time, the older students had greater gains than younger students, and non-NHOPI had greater gains than NHOPI students. However, these bivariate differences were attenuated in the regression analysis, with older age (40+) associated with greater knowledge gains and new CHWs (< 1 year of CHW work experience) associated with greater confidence gains. The latter finding is understandable, considering the significantly lower baseline confidence reported by individuals with no prior CHW experience. Program courses appear to have resulted in the inexperienced "catching up" to veteran CHWs. The overall classroom experience (i.e. classroom activities, assignments, student interaction, etc.) of both groups appears to have significantly contributed to increased confidence in performing the CHW role for both groups, with new CHWs experiencing the greatest benefit.

Limitations

First, the sample was small. Although an effort was made to test for differences among subgroups of students, dividing students into subgroups further reduced the sample sizes for analysis.

Second, the validity of the conclusions drawn from this study rests on the ability of the pre/posttest surveys to measure the intended targets (i.e. student knowledge, confidence gains, and satisfaction). As noted, the general question structure for the confidence measure were adapted from the *University of Southern Mississippi Self-Efficacy/Behavior Instrument for Objectives of CHAN Training Survey.* However, psychometrics for this survey were not reported in the Community Health Worker Evaluation Toolkit (The University of Arizona Rural Health Office and College of Public Health, 2005), and could not be located by this researcher. Additionally, the knowledge

survey items included in the survey for this study, while developed with the CHW population in mind, were also not tested for validity or reliability.

Third, this study did not utilize a traditional experimental design, in which an experimental group is compared to a control group. This limits the strength upon which conclusions can be drawn, with a plethora of potential errors explaining away positive results. First, pretest effect has been widely documented, in which participants tend to improve upon taking a test more than once. This effect is more pronounced when the pre- and posttests are given in intervals of less than one month (Kim, & Willson, 2010). Since this study separated pre- and posttest surveys by four months, the effect was not likely significant, yet without a control group to compare against, this error could not be effectively estimated. Second, other potential confounders caused by history and maturation could have affected student scores. Improvements in scores could have been influenced by other trainings attended by participants that are not part of the course being evaluated. Throughout the semester, incumbent workers participating in this study were exposed to learning opportunities from their daily work, supervision, and collegial contact. Qualitative data from *Study 2* provided a measure of validation and support for both knowledge acquisition and improved confidence findings in this study, discussed further in *Chapter 5.*

Conclusion

Overall, the program reached minority students, and these students gained knowledge and confidence in CHW core competencies and were satisfied with the courses. In comparing student characteristics, including age, ethnicity, education and CHW experience against course evaluation measures, some variation was seen in subgroups, for example, with students with < 1 year of work experience showing greater gains in confidence. These outcomes support the program's aim to effectively train the variety of community members who make up the current and future CHW workforce.

CHAPTER 3

EMPLOYER PERCEPTIONS OF THE UHMC-CHW

Abstract

Employer feedback serves a critical role in determining the effectiveness of workforce training. Study 2 used qualitative methods to collect CHW employer perspectives on the effectiveness of the UHMC-CHW in preparing new and incumbent CHWs for the workforce in Hawai‘i. Employers reported student participation in the program improved self-confidence and performance in the field.

Introduction

Racial and ethnic minorities in the United States and in Hawai‘i experience greater mortality and morbidity than non-minorities from many chronic conditions, including heart disease, cancer, and diabetes (Centers for Disease Control and Prevention, 2011; Centers for Disease Control Division for Heart Disease and Stroke Prevention, 2015; Pobutsky et al., 2011). One approach to combating health disparities involves the use of Community Health Workers (CHWs).

Despite the promise of CHWs to improve access to and quality of health care, especially for underserved minorities, development of the workforce has been hampered by unsustainable short-term grant funding (U.S. Department of Health and Human Services Health Resources and Services Administration Bureau of Health Professions, 2007). Consensus is growing among CHWs and stakeholders that standardized CHW training will lead to increased health care integration of and more stable funding for CHWs (Dower et al., 2006; May et al., 2005).

Employer feedback serves a critical role in determining the effectiveness of workforce training. According to the Center for Disease Control’s Framework for Program Evaluation in Public Health (CDC-FPEPH), stakeholders should be engaged in all phases of the evaluation process (Centers for Disease Control and Prevention, 1999). Logically, employers are stakeholders in the evaluation of workforce training, as they are the people for whom the training program is developing workers.

In a review of the literature, nine articles were found that evaluated college-delivered CHW programs using employer feedback. This feedback was solicited during the curriculum development process through focus groups (n=3, Love et al., 2004;

Farrar et al., 2011; Dumbauld et al., 2014), and surveys (n=4, Love et al., 2004; Wennerstrom, et al., 2014; Ruiz et al., 2012; Dumbauld, et al., 2014).

One study utilized employer interviews to identify the barriers and facilitators to implementing a college delivered training to incumbent CHWs. Farrar et al. (2011) evaluated college delivered-training for incumbent CHWs in five CHCs through the *Jobs to Careers* healthcare workforce initiative. Researchers conducted individual interviews with several administrative staff in each CHC (e.g., the director, human resources personnel, supervisor) to identify barriers and facilitators to implementation. They found workers were challenged to find the time and financial resources to attend classes, and they lacked educational readiness, experiencing barriers in the form of entrance exams and prerequisite courses. Employers found it difficult to manage patient care while workers attended classes, and some supervisors were resistant to initiating the training, creating additional tension between workers and supervisors. For CHCs located in rural areas, workers struggled to find transportation to courses and access reliable internet access to complete assignments. Initial findings were shared with employers, leading to facilitating initiatives such as offering courses onsite, tuition waivers, educational release time, and increased collaboration between educational program and direct supervisors. Organizational changes were seen as crucial to the ultimate success of this training program. Since employer interviews focused on program implementation, little was reported on employer perspectives of the impact the training had on training participants and agencies. However, the most valuable outcome of the training program identified by employers was that employees were more engaged at work and willing to take on increased levels of responsibility. Employers linked this outcome to increased confidence in skills and knowledge employees gained from participating in the training program. The *Jobs to Careers* evaluation also included a student survey measuring the impact of the training on their careers, which will be discussed in *Chapter 4*. (Farrar et al., 2011).

In the following study, employers and practicum supervisors were asked to evaluate the impact the UHMC-CHW has had on their agencies and the students participating in the training. They were also asked to identity agency and system

barriers to job creation, raises, and promotions for local CHWs. Results from this study provide a crucial stakeholder voice to college delivered CHW training literature.

Following the CDC-FPEPH of engaging stakeholders throughout the process (U.S. Department of Health and Human Services Centers for Disease Control and Prevention, 2011), CHW employer feedback was solicited during program development and evaluation design stages of the UHMC-CHW. This study provided an additional round of feedback in addressing the following research questions: From the perspective of employers and practicum supervisors, does the UHMC-CHW effectively prepare new and incumbent CHWs for the workforce in Hawai‘i? What changes could be made to the program to better meet agency and community needs? What impact has the program and its students had on their agencies? What agency and system barriers, if any, exists to advancing individual CHW careers?

Methods

Study Design

This was a qualitative study, carried out through individual interviews with employers and practicum supervisors of UHMC-CHW students. A series of interview questions were developed and asked in a semi-structured format. Following the CDC-FPEPH, which recommends researchers engage stakeholders in study design (Centers for Disease Control and Prevention, Program Performance and Evaluation Office, 2016), feedback on the study design was collected from telephone conversations with three CHW employers. These conversations validated the need to recruit employers and practicum supervisors from both clinical and community-based practice settings, and provided helpful feedback on the content and wording of interview questions.

To capture valid responses from participants, several design features were incorporated. First, individual interviews, as opposed to focus groups, were chosen to allow employers and site supervisors a safe space to be candid about employee/student performance. To encourage honesty, candidness, and constructive criticism about the program itself, the individual conducting these interviews had no prior history with the program. A primary goal of this study was to collect critical feedback to improve the program, and this goal was noted in the opening script in the *Interview Guide* and *Consent to Participate* form included in Appendix B. The interviewer also assured

participants that their responses would be de-identified prior to being released to program staff and future publication.

Sample

A purposive, heterogeneous sample of 8 employers and practicum supervisors was recruited from a pool of 18 clinical and community-based agencies identified as either employing, or providing practicum placements for students. For certificate students that were currently employed as CHWs (i.e., incumbent workers), their supervisors (i.e., employers) were recruited to participate. Those students who did not have prior CHW field experience completed a semester-long practicum placement in the community, and agency personnel responsible for supervising the students (i.e., the practicum supervisor) was recruited to participate in the study. In Maui County, CHCs and Native Hawaiian health centers are primary clinical settings, while community-based agencies include a variety of settings such as homeless shelters, aging support agencies, language access and health education programs, and child and family support service agencies. The program generated a list of 18 agencies known to employ and/or provide a practicum placement to students in UHMC-CHW program cohorts 1 and 2. These students were at various stages of completing the program, with some having taken only 2 or 3 courses (out of 5) that comprise the CHW certificate.

The list of potential interview participants was prioritized to assure even distribution between employers/site supervisors, and clinical/community settings. The interviewer phoned the prioritized list until a heterogeneous sample of eight was reached. Table 3.1 provides a breakdown of the role and practice setting of participants. Based on an initial analysis of the transcripts from these interviews, the interviewer and researcher agreed this sample of supervisors of incumbent/non-incumbent CHWs from clinical/community-based agencies provided a rich and diverse range of perspectives and experiences on the impact the program had on certificate students.

Table 3.1. Interviewee Characteristics

Practice Setting		Role	
Community-based	Clinic	Practicum Supervisor	Employer
4	4	5*	4*

*One interviewee was both employer and practicum supervisor to students.

Measures

Interviews sought to capture qualitative data from employers and site supervisors on their perceptions of the certificate program and its impact on CHWs. The primary areas of interest included participant perceptions of student core competency proficiency, gaps in the program's training content, program facilitators and barriers to student success, and the program's impact on the agency. Interview questions included:

1) In your opinion, how has the training impacted the student's/employee's performance on the job?
2) Are there specific skills the student has mastered or improved in? Participant provided detailed description of the following 11 core skills:
    a) Communication
    b) Interpersonal and relationship-building
    c) Service coordination and navigation
    d) Capacity building
    e) Advocacy
    f) Education and facilitation
    g) Individual and community assessment
    h) Outreach
    i) Professional skills and conduct
    j) Evaluation and research
    k) Knowledge base
3) What effects has student participation in the certificate program had on your agency?

4) In what areas do students/workers need further training to be completely prepared to enter the field?
5) What barriers are there to providing raises, promotions, and/or new positions to certificate completers?
6) How can we improve the program to better suit your agency and the larger workforce needs in our community?

Procedures

Interviews were conducted in-person at a location of convenience to each participant. A fellow doctoral student with experience conducting qualitative research, conducted the interviews. Interviewer bias was minimized, since she was independent of the UHMC-CHW development and implementation stages. Interviews were audio recorded and transcribed by an online service, rev.com.

The *Interview Guide* (Appendix B) included procedures used for attaining participant consent and a list of the primary and follow up questions. The interviewer was instructed to provide participants with a copy of a description of the 11 CHW core competencies found in the C3 Core Consensus (C3) Project Report (Rosenthal, Rush, & Allen, 2016) to assist in answering question #2. Participants were provided a culturally appropriate "mahalo" gift of no monetary value as an appreciation for their time. Participation in this study was voluntary, and all study participants were over the age of 18. This study was approved by the University of Hawai'i Institutional Review Board.

Data Analysis

After all interviews were completed and transcribed and responses de-identified by the interviewer, the two designated coders (interviewer and researcher) reviewed participant responses. Priori codes were developed to classify data along six areas of interest: 1) Competencies or skills mastered; 2) Barriers to raises and promotions; 3) Effect of student on agency; 4) Training impact on job; 5) Further training needs; and 6) Program improvement. Each coder analyzed and coded the transcripts in *NVivo 11.4 for Mac*, linking the original transcript quotations associated with each code.

To determine the level of agreement/disagreement between coders, the researcher calculated the overall unweighted Kappa statistic in *NVIVO*, at 0.34. According to Landis and Koch (1977), this indicates "fair agreement." Comparing coding

side-by-side, it was determined that, while there was significant agreement as to which statements should be coded, statements were often coded in different nodes. Coders met and discussed differences in coding and developed more descriptive node definitions and inclusion/exclusion criteria. Additionally, it was agreed to add a new node, *General Feedback,* to capture positive feedback and contextual information about agencies and employer perceptions of the CHW field. Transcripts were re-coded a second time using the newly modified codes, and a new overall unweighted Kappa statistic was calculated in NVIVO, at 0.62. According to Landis and Koch (1977), this value indicates “substantial agreement”. Coding was finalized, and the researcher explored each node for patterns and themes associated with the research questions. Based on the research questions posed and triangulation of results with Studies 1 & 3, it was determined that adequate thematic saturation had occurred. Quotations were collected that captured common and significant perceptions shared by participants.

Results

Interviews with eight employers and practicum supervisors (collectively referred to as *participants*) took place between July 10-August 21, 2017, and lasted between 27-53 minutes each. After completing the analysis of responses coded across six areas of interest, the following four thematic areas emerged: 1) CHW core competency proficiency; 2) Program and students impact on agency, 3) Barriers to raises, promotions, and employment; and 4) Program improvements and further training needs.

CHW core competency proficiency

Participants identified the following CHW competencies students had mastered or improved in as a result of participating in the program, followed (in parentheses) by the number of times this was mentioned: Communication skills (4), outreach (3), service coordination (2), advocacy (2), interpersonal relationships (2), and capacity building (2). Participants also discussed gains in student skills in several of the competency areas without specifically naming the skill. For example, one participant stated, “They know how now to make referrals. They know how to facilitate communication and also act as a bridge for the families and the resources,” indicating mastery of service coordination skills.

A central learning objective of the curriculum is for students to learn the core roles and functions CHWs play and how they fit within the field of public health and the delivery of health services. One participant shared:

> "The program helped students better understand the role of CHW(s) and appreciate the importance of that role in improving community health. I think it has broadened their knowledge regarding the field to give them an understanding how important their role is in the community".

Participants shared how students were taking the skills and knowledge learned in the classroom and applying them in the field. One participant expressed how these skills were critical to the job. "[The student had the] ability to find and share requested information, very important for us. Ability to seek out information for pertinent topics, very important."

Participants also connected the skills learned in the program to specific job tasks. For example, a participant related how a student would, ". . plan and conduct classes and presentations for a variety of groups, she's actually done a bit of that with our health fair and educational programs."

Participants connected the skills and experiences students attained during the program to a growing sense of confidence. For example, one participant said, ". . . they're maturing in their confidence. . . they've grown into their roles, and I think it is also because of the skill, not I think, I know because of the skills they're learning through this program."

Another participant stated, "So again, that fear of, because a lot of them are green, the fear of oh my gosh. Now they're comfortable because now they have a contact person that they know." One participant discussed how an employee who recently completed the certificate program began to show more "leadership and the ability to take on new projects/tasks", and was therefore promoted.

Program and Student Impact on Agency

Participants identified a number of ways the program and its students impacted their agencies. For example, some practicum students were hired by the agency when they finished their practicum placement. One of the participants interviewed discussed how the practicum placement served as an effective means of on-the-job training.

> “I think the internship is a really important piece, because I think if I would have hired her right out of the program without the internship, we would've had a different result. We would've been starting at more of a ground zero place, but because of the internship, she was able to get some hands-on experience. And I think that helped her a lot, so I think that's a really important piece of the program.”

Practicum students performed several roles for agencies during their tenure, including fundraising, community presentations, and outreach events (e.g., health fairs). One practicum student served as the lead on the roll out of a new computerized database, first learning and then teaching other employees the software. Another student contributed his cultural and language expertise to engage a community of Pacific Islanders, which ultimately led to the completion of a community assessment for emergency preparedness.

The program was influential in reintroducing and building CHW capacity at a CHC. Speaking about her executive director, one supervisor stated, “He said, we need the CHWs again, we need to do this and then that course came up. He was like, ‘What better way to start it all over again, we get the certification for it and we need that because they're the ones that actually go out there and outreach for us.’”

Participants identified several ways the program was impacting their employees. Students encouraged other employees to participate in UHMC-CHW. “I think it's great for her to see [student] had found her path, had gone to school, and now is working in her field.” The program directly impacted incumbent worker performance on job. “The transformation, the knowledge that she took on, she has more confidence talking to her clients.” In one instance, a participant credited the program’s training to an employee’s ability to leverage resources and increase community resource capacity. “She kind of negotiated with Maui Economic Opportunity, you guys pay 50%, we pay 50%. . . Now we get the referral count, we get the collaboration . . . from this class that she gained the knowledge that she learned to collaborate.” Another participant also identified the effect of networking between students to benefit their agency and community.

> “Through the program, through their classmates, through other agencies, they were able to network. A lot of networking has occurred. You can hear it when

> they're talking conversation like, 'oh I'm going to call so and so from [agency], or I'm going to call so and so from [agency]'. . . They're comfortable to bridge that resource or referral."

Barriers to Raises, Promotions, and Employment

The most frequent barrier to hiring and promoting CHWs, expressed by four participants, was the inflexible and unstable nature of grant funding. One participant shared how grant contracts are rigid and don't allow for the flexibility to budget for raises. Also discussed was the short-term funding cycle of grants and how that creates uncertainty and challenges agencies to plan for the future. Grant funding has long been identified as a barrier to the advancement and growth of the CHW profession (Dower et al., 2006; Kapheim & Campbell, 2014).

Integrating CHWs into the larger healthcare system is paramount to sustainable funding and livable wages, yet their role and position in this system has yet to be fully established or appreciated. One participant shared how the healthcare system sees CHWs as "cheap labor" and how that is "pushing against [their] upward mobility." The participant went on to say:

> "That's one of the reasons that upward mobility can be problematic, because the talented ones . . . that I gave additional responsibility, all got supervisory roles. Every 18 months they would march in and say, 'I got a two dollar raise, and I'm going to be so and so.' Then you start all over again building up."

Another barrier experienced by CHWs and their employers is the fact that healthcare and social service provider contracts often have minimum qualifications that require a college degree. "A lot of our contracts also require a Bachelor's or Master's degree so there's lots of movement within our agency to get to a higher level [degree]." Some employees do appear to be financially rewarded for furthering their education, "whenever you complete a certificate or a degree . . . there is a slight increase according to whatever their degree or certificate."

Program Improvements and Further Training Needs

Participants suggested several training topics to better prepare CHWs for the field, including (frequency mentioned): awareness of community resources (5), behavioral health (3), care coordination (2), time management skills (2), ethics (2), and

chronic disease management (1). There were discrepancies between participants about what areas students were proficient at and where they needed further training. For example, while community resources and care coordination were identified by several participants, one participant stated:

> "I think she's really strong at service coordination and navigation skills. I think she really came out of the program really understanding community resources, having a good feel for what we do".

To teach students about community resources, two participants suggested the program increase student exposure to the community in the form of agency field trips. This was also seen as an effective way to network with and get exposure to other professional roles. One participant wanted to know more specifically what content was covered in the curriculum, so she would understand what to expect from practicum students and graduates of the program. One participant requested an increased effort in recruiting bilingual students into the program in order to meet the needs of the community. Another suggested an increased emphasis on written communicating in a professional environment (e.g., emails), especially for younger students. One participant suggested holding classes at agency settings to improve access for incumbent workers.

It was suggested by one participant that the program help agencies unfamiliar with CHWs to understand and utilize the CHW role.

> "I think a mentorship for the agencies that hire community health workers, so that the school not only sends the CHW out, but there's a meeting with the employer to say, can I help you with the job description? How do you see this role? Have you had previous community health workers? How is this position going to be interrelating with the others?"

Discussion

This study had four main findings. First, employers identified concrete gains in students' core skills and knowledge as a result of participating in the program, and these gains were linked to improved confidence and performance in the field. Second, mastery of the core competencies and performance in the field varied from student to student. Third, employers suggested training topics to prepare CHWs for specific practice settings. Lastly, practicum students served to introduce agencies to CHWs, and

further expansion of this role could include CHW supervision training offered by the program.

Participants clearly connected student gains to participation in the program. Employers identified students' increased understanding and application of many of the C3 skills (Rosenthal et al., 2016), especially communication and outreach. Notably, communication was considered the most critical among the 11 core skills in earlier key informant interviews of Maui CHW employers conducted by LeGare (2016). This feedback informed curriculum development, and it appears employers were pleased with student competence in this area. The *Jobs to Careers* study noted "structured training on key competencies" led to job performance gains (Farrar et al., 2011), although their competencies were developed locally and not based on the national C3 competencies (U.S. Department of Health and Human Services Health Resources and Services Administration Bureau of Health Professions, 2007). Employers reported students increased confidence in their job, leading to greater responsibility, leadership and career advancement for students. Students were seen as maturing in their role and expanding into other job duties. Employers interviewed in the *Jobs to Careers* study also paired gains in confidence with improved work performance and increased capacity to take on greater levels of responsibility (Farrar et al., 2011).

There were variations between the perceptions participants had of student proficiency in the core CHW skills and knowledge, making it difficult to identify training gaps. These differences can be expected, since students were at different places in the certificate program at the time participants were interviewed. For example, students who had completed the *Case Management* course would be expected to have a better understanding of care coordination and community resources. Relatedly, it was evident in the range of employer feedback that students varied in their skill level, maturity, and overall job performance. This is also expected, given the various degrees of job experience, ages, and individual characteristics represented in students as they entered the program. To get a more accurate assessment of the gaps in training content, a survey could be administered to employers of certificate graduates to identify deficiencies.

Several training topics were suggested by participants that were covered in certificate courses, such as care coordination, community resources, and ethics. Participants had a limited awareness of content covered in courses and may not have been aware that students were learning about these topics. Participants were interested in learning more about the program, with one participant even expressing interest in contributing to student learning. The program should consider ways to increase employer awareness of the curriculum content, especially those providing supervision to students. Another reason for this dissonance could lie in the depth of coverage in addressing these topic areas. The program was designed to equip graduates with a basic understanding of roles and skills that can and should be further developed as students gain more experience in the field. Perhaps the program should also make clear that students will perform complex tasks, such as care coordination, at a beginning level of proficiency.

Employers requested further training in topics that are specific to practice settings, such as behavioral health and chronic disease. Behavioral health was most frequently mentioned, and this finding was also reported in a New Orleans survey of CHW employers (Wennerstrom et al., 2014). This and other special topics could be developed as advanced CHW certificates offered at a college or in the community, and it is recommended the program explore this opportunity with key stakeholders. It appeared that practicum students provided an avenue for introducing the CHW role into an agency. One challenge, as understood by a participant, lies in the possibility that agencies unfamiliar to the CHW role may not know how to properly utilize and/or supervise CHWs. It was suggested that the college mentor, train and support agencies new to the utilization of CHWs. Organizations, such as the Earth Institute at Columbia University (2013) and MHP Salud (2014), have developed CHW supervision training resources. If the UHMC-CHW were to develop and offer training to support employers interested in incorporating CHWs into their agencies, this could lead to greater utilization of CHWs in Hawaii.

Lastly, as interest in elevating the CHW profession continues, according to one employer interviewed, some healthcare providers appear to see CHWs as “cheap labor.” There has been a long-standing debate among CHWs and their allies and other

healthcare stakeholders as to the classification of the CHW profession. Does the healthcare system see CHWs as unlicensed, paraprofessionals and therefore relegate them dead-end jobs, or is this a profession with real career advancement opportunities? Based on comments made by employers in this interview, in the current workforce environment, CHWs interested in continued career advancement will need to attain a college degree in a related profession such as public health, social work or nursing.

Limitations

Steps outlined in the previous *Methods* section attempted to provide a representative sample of CHW employers and their perceptions, but there is risk that not all voices of this group were captured. Of the 18 eligible employers identified for the interview pool, 8 were initially chosen to interview. Participants shared similar perceptions on a number of topics and provided ample responses to address the research questions, leading the researcher to determine that adequate thematic saturation had been reached. However, there could be significant differences in the perceptions and experiences of employers in the pool not interviewed in this study, and this could cause incomplete or inaccurate conclusions about the effectiveness of the certificate to prepare students to enter the breadth of CHW practice settings.

Furthermore, due to the localized nature of the sample frame in this study, the resulting evaluation outcomes and conclusions may have limited generalizability outside of Hawai‘i. However, employers in this study shared similar perceptions reported in other college-delivered training evaluations, including increased understanding and confidence in core skills, short-term grant funding as a barrier to hiring and promoting CHWs, and support for the effectiveness of training to improve performance in the field. These parallel findings support the validity of this study to describe a range of employer perceptions of the program.

A common challenge in collecting honest, critical feedback about a program is the phenomenon known as social desirability response bias, where individuals attempt to answer questions in ways they believe will please others (Dillman, Smyth, & Christian, 2014). This threatens to falsely skew data in a positive direction and could undercut a primary goal of program evaluation: identifying gaps and deficiencies for future program improvement. Several measures were taken to minimize the risk of

social desirability response bias among participants. First, participants were notified in the consent statement (Appendix B) that program staff is requesting critical feedback to improve the program for future students. Participants were also assured that their responses would be de-identified and remain anonymous to program staff, students and in publication. Lastly, someone unaffiliated with the program was purposely chosen to interview participants, increasing the likelihood they would share criticism about the program and staff. Considering the fact that this researcher has been a central figure in the development and implementation of the program being evaluated, effort was made to minimize the potential for researcher bias. Including a coder who is not associated with the program also served to reduce the risk of this researcher to unduly influence the study results.

Conclusions

Participant perceptions of the program and its impact on students and their agency where overwhelming positive. Participants shared concrete examples of how students were applying core CHW competencies taught in the program with great success. Participants shared that incumbent workers improved their performance in the field as a result of taking certificate courses, and practicum students were credited with performing a number of important roles and tasks in their agency settings.

Participants requested additional training outside the scope of the core CHW competencies, and further exploration is warranted to determine the best avenue to fill these workforce needs. Participants identified challenges associated with creating a sustainable and more widely utilized CHW workforce with the current grant funded climate. Policies need to be explored that more permanently incorporate CHWs into the healthcare system. Additionally, the CHW role could be introduced into new agency setting with proper technical support and training in the supervision and utilization of CHWs.

CHAPTER 4

THE CERTIFICATE PROGRAM'S IMPACT ON STUDENT CAREERS

Abstract

CHWs are increasingly recognized for their ability to bridge the divide between underserved minority patients and the healthcare system. Unfortunately, the CHW profession has historically been relegated to paraprofessional status among other professions within the healthcare system, resulting in poor career prospects. College-delivered training programs have been shown to improve the careers of CHWs (Kapheim et al., 2014; Ferrar et al., 2011). Results from a survey of UHMC-CHW graduates provides further evidence of the positive career impacts CHWs experience as a result of participating in standardized training provided in a college setting. Graduates reported improvements in their skills and career outcomes, and high levels of satisfaction with the training program.

Introduction

The CHW profession in the United States can be traced back to the 1960's, as lay health advocates in minority and underserved communities. As evidence of their effectiveness in addressing the health of minority and underserved populations continues to grow, there has been a convergence of interests from health systems, providers, public health researchers, and government officials to increase their integration in the healthcare system. CHWs success lies primarily in their insider status, sharing similar life experiences, cultural ties, and geography with patients. Healthcare providers rely on the existing community ties CHWs have with patients to provide the bridge between hard to reach patients and the healthcare system (Johnson & Gunn, 2015).

Unfortunately, the CHW profession has historically been relegated to paraprofessional status among other professions within the healthcare system, resulting in poor career prospects. A Massachusetts report identified several workforce issues, including high turnover, low wages, poor job security, and no formal career ladder for CHWs (Division of Primary Care and Health Access Bureau of Family and Community Health Center for Community Health Massachusetts Department of Public Health,

2005). There is interest among CHWs and their allies to elevate the profession and the individual status of its members.

Standardized training and certification are widely seen as avenues to advancing the profession, considering the important role each play in other healthcare professions (Kapheim et al., 2014). Colleges are beginning to play a role in advancing the CHW profession by offering credit-based training courses. In a national review of CHW training and certification programs, Kash et al. (2007), found that CHW training programs at community colleges launched the careers of many CHWs, who continued on to advanced career opportunities and professions in nursing a social work.

In a systematic review of the literature evaluating college-delivered CHW training, two of ten studies measured the impact training had on the careers of participants. In both studies, participation in training was linked to incumbent worker raises and promotions, and improved student self-efficacy (Love et al., 2004; Farrar et al., 2011). CCSF administered phone surveys one year following graduation from the program to track whether students obtained a CHW position, received a promotion, or continued full-time employment (Love et al., 2004). The second study, *Jobs to Careers*, reported on the implementation and impact of 5 separate CHW training programs. Training participants completed a written survey at the end of a three-year grant period measuring the impact the training had on wages, educational attainment, and overall career outlook (Farrar et al., 2011). Career outcome frequency tables presented in both studies demonstrated positive career outcomes for participants. *Jobs to Careers* concluded that credit-based, college delivered training holds the potential to improve the socioeconomic status of CHWs through wage increases and greater career opportunities, while at the same time, increasing healthcare workforce diversity and culturally appropriate services (Farrar et al., 2011).

Based on the national promising practices in college-delivered CHW training, UHMC developed a series of five courses for CHW training in Hawai‘i. The curriculum is designed to teach the 11 core skills outlined in the C3 Core Consensus Report: communication, service coordination, advocacy, capacity building, outreach, professional, interpersonal, education/facilitation, individual/community assessment, evaluation/research, and knowledge base (Rosenthal et al., 2016). The certificate can

be completed in one year, although students can move through the program at their own pace. Students earn college credit, which can ladder to UHMC's Associates in Human Services and a planned University of Hawai'i Kapiolani Community College Associates in Public Health. The courses follow a progression of the core attitudes, skills, and knowledge of the CHW profession, from basic understanding of the core competencies taught in CHW Fundamentals (e.g. ethics and cultural humility), to the Capstone Practicum, where students apply what they have learned in the field. To assure local stakeholders informed curriculum development, individual interviews were conducted with 24 Maui County employers to determine the skills most important to performing the CHW role. Of the 11 C3 core skills, communication, interpersonal, and professional skills were most commonly identified by employers (LeGare, 2016).

This study addressed the following research questions: What impact has completion of the UHMC-CHW had on student skills and career outcomes, and how satisfied were they with the UHMC-CHW in meeting their professional training needs?

Methods

Study Design

This study consisted of a web-based survey (Appendix C) administered to graduates of the certificate program. A series of Likert-scaled items measured student perceptions of the impact the certificate has had on their skills, professional life, future career goals, and their overall impressions of the program to meet their training needs.

Sample

The first and second cohorts of UHMC-CHW courses started in the Fall 2015 (n=33) and 2016 (n=25) respectively. Once students are accepted into the program, they are free to take courses at their own pace. While the certificate is designed to be completed within a single academic year, most are part-time students and take longer to complete all 5 certificate courses. By the end of Spring 2017, there were 16 completers, all of which were recruited to participate in the survey during the Summer 2017. Completed surveys were collected from 14 students, a response rate of 87.5%.

Survey Measures

Survey items measured 4 domains: demographics, career outcomes, perceptions of the impact of the certificate on professional and person life, and satisfaction in the program to meet training needs.

Participant demographics. Multiple choice questions collected participants' age (18-29, 30-39, 40-49, 50-59, 60+), gender (male, female, other), ethnicity (American Indian or Alaskan Native, Asian, Black or African-American, Hispanic, Native Hawaiian or other Pacific Islander, White, Some other race/ethnicity [please specify]), education (less than high school/high school/1-15 credits/16-30 credits/Associates/Bachelor), years of CHW Work experience (0, <1, 1-3, 3+), semester of certificate completion (Spring 2016, Fall 2016, Spring 2017).

Career outcomes. Multiple choice questions collected participants' career status prior to starting the training and after completing the certificate on the following variables: employment status (full-time, part-time, not working), type of employment (working as a CHW, working as a related helping professional, not working as a CHW or related helping professional), and wage (open-ended, with the option of being reported as hourly, monthly or yearly), recent raise and/or promotion, and future plans (to seek employment, to seek further education, to quit work, and other).

Perceptions of the program's impact on professional life and career goals. One multiple-choice item collected plans for further education (Associates, Bachelors, Master's, Doctorate, Certified Substance Abuse Treatment, Other). A series of Likert response (not at all, somewhat, moderately, very, extremely improved) items collected data on self-rated improvement in the 11 core skills outlined in C3 (communication, service coordination, advocacy, capacity building, outreach, professional, interpersonal, education/facilitation, individual/community assessment, evaluation/research, knowledge base) (Rosenthal et al., 2016). Items measuring rewards received as a result of completing the certificate included the following questions: 1. I am better at my job, 2. I received a wage increase (raise) at my job, 3. I have greater responsibility at my current job, 4. I am continuing my education. Response choices provided were: does not apply, no, or yes. These questions were adapted from the *Jobs to Careers* study (Farrar et al., 2011). Another series of Likert response items included: 1. Completing the UHMC CHW certificate has started me on a path to reaching my career goals, 2. I am

considering career options that I was not considering before completing the UHMC CHW certificate, 3. Since completing the UHMC CHW certificate, I am more satisfied with my job than I was before, 4. Since completing the UHMC CHW certificate, other professionals respect me more. Response options for these items included: does not apply, strong disagree, disagree, neutral, agree, or strongly agree. These questions were adapted from the *Jobs to Careers* study (Farrar et al., 2011).

The CDC-FPEPH recommends stakeholders provide input when designing evaluation tools (Centers for Disease Control and Prevention, Program Performance and Evaluation Office, 2016). Additionally, it is important that survey instructions and questions are understood by the target population to assure accurate responses. Three certificate students were recruited in the Spring 2017 to provide feedback on the survey. Utilizing the *think aloud method* (Ericsson, & Herbert, 1993), students piloted the survey and discussed each item with the researcher as they took the survey. Additional feedback was sought from students regarding the length of the survey and its overall effectiveness in capturing their perceptions of the program and its impact on them. Based on student feedback, six items were reworded to improve clarity. Participants agreed the online delivery method, length and scope of the survey were reasonable and agreeable.

Procedures

Certificate completers were initially recruited to participate in the survey in an email invitation sent July 27, 2017. Follow-up emails were sent to students who did not complete the survey within 7 and 21 days, and the survey was closed after 30 days. To assure participants' identification was blinded from this researcher, the *collect responses anonymously* setting within Survey Monkey was selected. To compensate their time, each participant that completed the survey was mailed a water bottle. Participation in the study was tracked through the *email invitation tracking* tool in *Survey Monkey* to verify individual participant survey completion. A water bottle was mailed within 7 days to participants who completed the survey. This study was approved by the University of Hawai‘i Intuitional Review Board.

Data Analysis

Raw data collected in *Survey Monkey* was transferred to an *Excel* spreadsheet. Unanswered questions were treated as missing data and excluded from analysis. Participant responses of *does not apply* were excluded from percentage calculations in frequency tables. Demographic information was analyzed to determine trends in ethnicity, age, education and incumbency of graduates and then compared to the demographic makeup of beginning cohorts, to determine representation of these groups in graduates. Categorical data are reported in frequency tables. Likert items that measured *skills improvement*, *impact of the program on careers*, and *satisfaction of the program* are reported in frequency tables, and grouped by level of improvement or agreement. Mean scores were calculated for individual Likert items, and a Likert scale score was tallied and averaged for *core skills improvement* and *satisfaction with the program*.

Results

Of the 16 graduates recruited for the survey, 15 (93.8%) responded to the survey. One respondent answered only the first 7 survey items, allowing for inclusion in the demographics data only, bringing the response rate for completed surveys to 14 (87.5%).

Demographics

Graduates tended to be female (n=14, 93.3%), under age 40 (n=9, 60.0%), and Native Hawaiian (n=9, 60%) (Table 4.1). Most reported at least some college experience upon entering the program (n=13, 86.7%) and some experience working as a CHW (n=13, 86.7%). The median and modal age range of respondents was 30-39 and 18-29, respectively, although there was representation in all age ranges from 18 to over 60.

Table 4.1. Graduate Characteristics

Race/Ethnicity n(%)	
Hawaiian	9(60.0)
African American	1(6.7)
Filipino	1(6.7)
Native American	1(6.7)
Polynesian, Micronesian, Fijian	1(6.7)
Hispanic	1(6.7)
Caucasian	1(6.7)
Age n(%)	
18-29	5(33.3)
30-39	4(26.7)
40-49	3(20.0)
50-59	1(6.7)
60+	2(13.3)
Gender n(%)	
Female	14(93.3)
Male	1(6.7)
Education n(%)	
High school degree or GED	2(13.3)
At least 15 college credits	3(20.0)
At Least 30 college credits	7(46.7)
Associate degree	1(6.7)
Bachelor degree	2(13.3)
CHW Work Experience n(%)	
No experience	2(13.3)
Less tha 1 year	5(33.3)
1-3 years	4(26.7)
More than 3 years	4(26.7)

Skills Improvements

Participant self-rating of skills improvement (Table 4.2) yielded a median score of 4/*very improved* (64.3-85.7% very/extremely improved) for all 11 skills. All 14 participants noted at least some improvement (somewhat improved-extremely improved) in 6 of the 11 skills domains. One student with one to three years of experience as a CHW reported no change in five skills.

Table 4.2. Graduate self-rated skills improvement

Survey Question	C3 Skill	Not At All Improved n(%)	Very/Extremely Improved n(%)
How much have you improved in the following skills as a result of taking the UHMC CHW Certificate program?	Communication skills	0(0)	11(78.6)
	Interpersonal and relationship-building skills	1(7.1)	11(78.6)
	Service Coordination and Navigation Skills	1(7.1)	9(64.3)
	Capacity building skills	0(0)	11(78.6)
	Advocacy Skills	1(7.1)	10(71.4)
	Education and Facilitation Skills	1(7.1)	9(64.3)
	Individual and Community Assessment Skills	0(0)	12(85.7)
	Outreach Skills	0(0)	9(64.3)
	Professional Skills and Conduct	1(7.1)	10(71.4)
	Evaluation and Research Skills	0(0)	9(64.3)
	Knowledge base	0(0)	12(85.7)

Career Rewards & Goals

Graduates were asked to rate the impact the certificate program has had on their careers (Table 4.3). Eight (57.1%) participants were working in CHW/CHW related jobs prior to enrolling in the program (referred to as incumbent workers). At the time of the survey, 11 (78.6%) reported being employed in CHW/CHW related jobs. Specifically, two participants unemployed at the start of the program had secured CHW related jobs at the time of the survey, and one participant employed in a job un-related to the CHW profession at the start of the program had shifted into a CHW position. Of the 11 working in CHW/CHW related jobs after graduation, 9 (81.8%) reported they were better at their job after completing the certificate courses. Almost half (45.5%) reported receiving a raise, and one (9.1%) a promotion. The mean hourly rate for these graduates was $18.02, a mean increase of 17.2% compared to the mean starting wage of $15.16.

Graduates reported improvements in their professional life, answering *agree or strongly agree* to statements *considering career options that I was not considering before* (n=13, 92.9%), *I am more satisfied with my job than I was before* (n=7, 63.6%), and *other professionals respect me more* (n=6, 50%). Graduates had a positive outlook on their job prospects, with 87.6% (n=12) feeling moderately, very, or extremely confident they could find work as a CHW.

All graduates (n=14, 100%) planned to continue their education, including 2 participants new to college. Degrees programs of interest included, Associates (n=5, 35.7%), Bachelors (n=8, 57.1%), Masters (n=9, 64.3%) and Doctorate (n=1, 7.1%).

Table 4.3. Graduate career rewards and goals

Survey Question		Yes n(%)
Stem	Branch	
What rewards have you received as a result of completing the UHMC-CHW Certificate?	I am better at my job.	11(91.7)
	I received a wage increase (raise) at my job.	5(45.5)
	I have greater responsibility at my current job.	8(66.7)
	I am continuing my education.	14(100)
Survey Question		Agree/Strongly Agree n(%)
Stem	Branch	
To what extent do you agree with the following statements?	Completing the UHMC CHW certificate has started me on a path to reaching my career goals	12(85.7)
	I am considering career options that I was not considering before completing the UHMC CHW certificate.	13(92.9)
	Since completing the UHMC CHW certificate, I am more satisfied with my job than I was before.	7(63.6)
	Since completing the UHMC CHW certificate, other professionals respect me more.	6(50.0)

Satisfaction with the Program

When asked to rate the program, graduates reported high levels of satisfaction (Table 4.4), responding *very/extremely satisfied* to instructor teaching (n=14, 100%), support from instructors and program staff (n=14, 100%), and program meeting their training needs (n=12, 85.7%). Graduates also confirmed being *very/extremely likely* to recommend the program to others (n=12, 85.7%).

Table 4.4. Graduate satisfaction with the program

Survey Question	Very/Extremely Satisfied n(%)
How satisfied are you with this program in meeting your professional training needs?	12(85.7)
How satisfied are you with the instructors teaching the courses in this program	14(100)
How satisfied are you with the support you received from your instructors and school counselors while completing the certificate?	14(100)
How likely are you to recommend this program to a friend or colleague?	12(85.7)

Discussion

Graduates of the UHMC-CHW reported improvements in all 11 C3 core CHW skills, supporting adequate coverage of those skills in the 5 courses that make up the certificate. Perhaps most significant is the number of students who reported very/extremely *improved* in the skills that Maui CHW employers prioritized as the top three skills required for CHW for at their agencies (LeGare, 2016), which included communication (n=11, 79%), interpersonal (n=11, 79%), and professional (n=10, 71%) skills. This is an indication that the program is effectively training students in the skills local employers deemed most critical.

A significant number of graduates experienced upward mobility (wage increases, promotions) increased job satisfaction, and elevated professional status during their tenure in the program. Taken together, the program has improved the careers of graduates in concrete and meaningful ways. In addition, all 14 graduates were

interested in continuing on in their education, indicating this program has been an encouraging college experience. The UHMC-CHW could be functioning, in part, as a ladder into other professions such as public health, social work and nursing, as was concluded in a national review of training and certificate programs (Kash et al., 2007). A follow up longitudinal study of graduates would serve to test this hypothesis.

The demographic characteristics of graduates follow some of the national trends, including a female dominated, ethnic minority workforce (U.S. Department of Health and Human Services Health Resources and Services Administration Bureau of Health Professions, 2007). Conversely, the age distribution of graduates of this program skewed younger, with a median age of 30-39, while the average age of CHWs nationally in a national survey in 2014 was 45 (Arizona Prevention Research Center, 2014). Additionally, a significant portion of the national CHW workforce (42.4%) attained a high school education or less (U.S. Department of Health and Human Services Health Resources and Services Administration Bureau of Health Professions, 2007), while 86.7% of the graduates of this program started with some college experience and added 15 additional credits from completing the certificate. A possible explanation to this difference could come from the recruiting pool. While some students were recruited directly from agencies during outreach to employers, several human services majors already attending the college were also offered the opportunity to complete the certificate. This likely skewed participants to a younger age and higher educational attainment than is represented in the overall CHW workforce. Additionally, it is not known if the CHW workforce in Hawai‘i is adequately represented in the three cohorts recruited or the graduates who successfully completed the program, since there has not been a systematic evaluation of the CHW workforce in Hawai‘i to-date.

Average hourly wages for those in CHW/CHW related jobs upon entering the program and after graduating were $15.16 and $18.02, respectively. Answers to the question, *Have you received a raise and/or promotion during or after completing the UHMC CHW certificate?* compared to starting and current wages was incongruent for 4 students, who did not claim receiving a raise, yet claimed higher wages at the end of the program. This discrepancy appears partly caused by changing jobs and not considering moving to a new position with a higher wage as a raise. Factoring in incumbent worker

raises based purely on starting and current wages, 72.7% received a wage increase, with a mean wage increase of 27%. In some respect, this is a positive result, improving their socioeconomic status of a disadvantaged group. Yet it is arguable these are marginally livable wages in Hawai‘i, placing the mean full-time graduate wage ($34,598) at 127% of the 2017 Hawaii poverty guidelines for a family of 4 (The Department of Health and Human Services, 2017). Low wages are also experienced in the general social service workforce in Hawai‘i, with Social & Human Service Assistants earning $16.39/median and $16.59/mean. The national mean wages reported by CHWs in 2016 was $19.80 (United States Department of Labor Bureau of National Statistics, 2016), still above the mean wage for graduates of this program. Hawai‘i is a high cost of living state relative to the national average. California wages provide a more comparable market, with a mean CHW wage in 2016 of $22.66 (United States Department of Labor Bureau of National Statistics, 2016), making program graduate wages at 80% of California CHWs.

Limitations

A significant number of graduates experienced upward mobility (wage increases, promotions) after completing the CHW program, but it is not clear whether this was primarily due to the program, the natural progression of their career path, or some other causal factor(s), since there was no control group included in this study for comparison. Additionally, there was an apparent response error for four individuals, claiming wage increases (comparing item 9 & 12) but not raises (item #13). This might be due to the fact that each survey item was isolated to a single page and the participant could have misunderstood the term *raise*. Utilizing starting and ended wages versus asking graduates if they received a raise produces significantly different results, at 72.7% and 36.4% respectively. Conclusions about the impact this certificate program has had on graduate’s wages and promotions should therefore be guarded.

The survey measured graduate satisfaction in the program meeting their training needs. The sample frame for this study excluded those students who started, but did not complete the certificate program. This could inaccurately skew student satisfaction results in a positive direction, given those in the non-completer group could have shared a uniquely negative perspective on the program. *Study 1* collected similar satisfaction

measures for 49 students in courses along the certificate pathway, providing a second data source to corroborate satisfaction results from this study. Triangulation of outcomes across all three studies will be discussed in *Chapter 5.*

Participants of this survey could be influenced by the desire to answer questions about the program in positive terms. To minimize social desirability response bias, participants were encouraged to be candid in their responses. This survey included a *consent to participate statement* that iterated the desire of program staff to gather constructive criticism to assist in ongoing program improvements. Additionally, participants were assured their responses remained anonymous.

Conclusion

This study found the UHMC-CHW program benefited the careers of graduates, yet this critical workforce continues to experience low wages and limited employment opportunities. CHWs and their allies need to advocate for policies that provide sustainable funding and wage increases for this vital role in our healthcare and social services workforce in Hawai‘i. The standardized training provided by this program contributes to this end.

CHAPTER 5

CONCLUSION

This dissertation evaluated the effectiveness of the UHMC-CHW in providing core competency training essential to building capacity for Hawai‘i’s CHW workforce. Taken together, data collected from students and employers confirm that the program was successful in teaching the C3 skills, building student confidence in applying those skills, and ultimately improving performance in the field. Graduates of the program experienced career rewards, such as new jobs, greater satisfaction with employment, raises, and a desire to continue their education. This chapter provides a summary of the three studies, followed by policy and practice recommendations and directions for further research to support the CHW profession.

Summary of Findings

In the first study, analysis of quantitative measures taken in two program courses evidenced significant overall improvement in student knowledge and confidence in applying skills taught, and satisfaction in the courses meeting their training needs. These results were consistent with prior college delivered CHW training evaluations reported in the literature. In comparing knowledge and confidence gains across student characteristic, including age, ethnicity, education and CHW experience, some variation was discovered. Students new to the CHW field appeared to benefit most from the training. Knowledge scores of NHOPI students fell short of statistically significant improvement, yet they were the subgroup most satisfied with the program in meeting their professional training needs. It is recommended that the program consider administering performance-based assessment tools to measure knowledge acquisition, such as those developed by CCSF and recommended by the CHW-NEC. Despite these exceptions, students from a variety of ethnicities, ages, education, and CHW field experience improved their knowledge and confidence in applying the core skills necessary to succeed as CHWs.

The second study carried out individual interviews with CHW employers and practicum supervisors to solicit their perspectives on the impact the program has had on students and agencies. In these interviews, student participation in the training program was directly linked to greater confidence in and performance of the core roles and skills

of the CHW profession. Local employers confirmed prior reports in the literature that short-term grant funding continues to hamper job creation, raises and promotions for the CHW workforce. Additionally, it appears there may be a glass ceiling for those CHWs who desire career advancement but do not go on to attain a college degree.

The third study measured the impact the program has had on the careers of graduates. The ethnic makeup of program completers appears representative of the local population of CHC patients, confirming students from minority and underserved groups were successfully recruited, retained, and graduated the program. Students reported improvements in all 11 core CHW skills, with some of the biggest gains in the skills judged most critical by local employers. A significant number of graduates experienced upward mobility (wage increases, promotions), increased job satisfaction, and elevated professional status following graduation. Average hourly wages increased by 27% to an average full-time salary of $34,598. However, considering the high cost of living in Hawai‘i, this remains a low-wage job. Perhaps the most significant finding was that all 14 students planned to continue taking college courses. When one considers the feedback provided by employers in Study 2, continuing on to attain a college degree appears the surest route to career advancement for CHWs.

Employing a mixed-method approach to program evaluation, each of the three parallel studies corroborated one another, resulting in more complete and valid conclusions. Considering the weakness inherent in the pre-experimental design of *Study 1* (i.e., no control group)*, Study 2* data collected from employers served to validate the conclusion that student knowledge and confidence significantly improved. Employers directly translated gains in confidence to improved job performance (*Study 2)*. By measuring skills attainment from student self-reports (Study 3) alongside employer observations, skills improvement was cross-verified, and a deeper understanding was learned of the nature of the impact this newfound growth had on performance in the field.

Development and implementation of the UHMC-CHW followed several recommendations made in the CHW-NEC guidebook (Table 1.3). First, employers were engaged in all stages of the process, and through focused recruitment efforts, a significant number of experienced CHWs participated in the program. Partnering with

these key stakeholders assured the training met the needs of the community, as seen in the clear match between CHW improvements in the skills most critical to employers. Additionally, student demographic data collected in Studies 1 & 3 indicated ethnic concordance between program students and the population served by agencies employing CHWs. Native Hawaiian students comprised the largest ethnic group, redressing an underrepresented ethnic group within the healthcare workforce in Hawai‘i.

Since CHWs tend to be members of minority and disenfranchised groups, they are less likely to attend and/or succeed in college. Based on CHW-NEC recommendations, the program removed barriers commonly experienced by non-traditional students attending college, such as prerequisites and other admission requirements and offering courses at night to cater to incumbent workers. Additionally, course instructors utilized student-centered, popular education/adult learner approaches to engage students as active learners and teachers. Students in Studies 1 & 3 reported high levels of satisfaction in the program, and all 14 graduates planned to continue on to attain a college degree. These findings confirm that students entering (and reentering) college through this program had a positive college experience and were confident and inspired to continue their education.

Recommendations

Results from this evaluation identified two recommendations. First, alternative measures should be explored to measure student learning. Despite efforts to adapt *Study 1* multiple-choice knowledge questions to the population of non-traditional learners, CHW-NEC concluded performance-based assessment tools provide a more robust measure of learning for non-traditional/adult learners (Arizona Area Health Education Centers Program Community Health Worker National Education Collaborative, 2008). CCSF developed a performance-based assessment by which students demonstrated specific competencies in simulated client encounters, scored by CHW employers (Love et al., 2004). At the time of this evaluation, the UHMC-CHW had researched, but not yet implemented performance-based assessment tools in program courses. It is recommended the program explore this and other performance-based assessment tools, to improve the evaluation of student learning, especially for the non-traditional students common to the CHW profession.

Based on employer feedback, the program should consider developing additional training to meet the needs of local CHWs and employers. Trainings specific to community-based and clinical settings could build capacity and expertise among CHWs in areas such as behavioral health and chronic disease management. To support increased integration of CHWs into the healthcare system, the program could provide training, mentoring and technical support to agencies interested in starting a CHW program.

Implications for Policy and Practice

The main barrier to CHW employment, raises, and promotions identified by employers was the short-term nature of grants they have relied upon to fund these positions. It appears positions on Maui are not fully integrated into the larger healthcare system, leading employers to be either hesitant or financially unable to hire or promote CHWs. A two-pronged approach should be considered in addressing funding limitations expressed by employers. First, agencies and the program can work together to leverage this standardized training program to access more grant funding. This could provide more CHW positions in the short-term. Second, stakeholders could secure more stable, long-term funding for CHWs by incorporating this training program into policy proposals aimed at integrating CHWs into the financial structures of healthcare.

Community colleges can significantly contribute to the developing CHW profession. They exist to provide an open door to higher education resources for the benefit of the community and its members. For this reason, CHW training should continue to be developed within community colleges, as they appear the more favorable higher education setting for CHW training relative to 4-year institutions. Community colleges should endeavor to prepare those newly entering the field, as well as strengthen the knowledge and skills of incumbent CHWs. College programs should develop standardized curriculum informed by the universally agreed upon C3 core competencies and grounded in program and teaching practices recommended by the CHW-NEC. However, there are important considerations in evaluating the future role colleges can play in CHW training. Barriers to student success within the college setting, such as cost, training location, and English proficiency, should be carefully

identified and addressed when possible. Additionally, college training should not become a gatekeeper into the profession. Love, et al. (2004) so poignantly stated:

> "We strongly feel that college credit-bearing certificate programs should not be required hurdles for entree into community health work, nor should they be the only path into the field. Too often, higher education has been financially or academically inaccessible to community people, and numerous CHWs excel in the field without benefit of college study (p. 426)."

APHA SPIG agrees with this viewpoint, recommending "multiple points of entry into the practice" (American Public Health Association, 2009, para. 24). Farrar et al. (2011) provided a comprehensive discussion on the common barriers that occur on the individual, employer, and institutional levels of college delivered CHW. Colleges interested in creating CHW training programs could benefit from reviewing their lessons learned.

Future Research Directions

To understand the long-term impact of the UHMC-CHW on individuals and the CHW profession, longitudinal follow up surveys will be administered to graduates at two and five-year increments. Further program evaluations should include distal measures, such as the program's effect on the delivery of services and, ultimately, the health of patients served by program graduates.

CHW 135 - Health Promotion/Disease Prevention Pre-Test Evaluation Survey Spring 2017

The following survey is designed to measure how much students have gained from taking CHW 135 - Health Promotion/Disease Prevention. Your participation is voluntary. If you chose to proceed, your answers will remain anonymous and will not affect your grade in any way. The results from this survey will be used to evaluate the effectiveness of the UHMC CHW Certificate Program.

To assure your answers are anonymous and paired to your post-test, you will need to create a unique identifier. So, fill in the following:

1. Last number in your birth year - ex. 197<u>1</u> ___

2. Last letter in your first name - ex. Charli<u>e</u> ___

3. Last letter in your last name - ex. Schlathe<u>r</u> ___

CHW 135 - Health Promotion/Disease Prevention Pretest/Spring 2017

Student Information

The following questions ask about you. This information will help us understand how well the program helped different kinds of students. Thanks for your anonymous responses.

1. What is your age?

- ◯ 17 or younger
- ◯ 18-20
- ◯ 21-29
- ◯ 30-39
- ◯ 40-49
- ◯ 50-59
- ◯ 60 or older

2. What is your race/ethnicity?

- ☐ American Indian or Alaskan Native
- ☐ Asian
- ☐ Black or African-American
- ☐ Hispanic
- ☐ Native Hawaiian or other Pacific Islander
- ☐ White
- ☐ Some other race/ethnicity (please specify)

3. What is the highest level of school you have completed or the highest degree you have received?

- ◯ High school degree or equivalent (e.g., GED)
- ◯ At least 15 college credits
- ◯ At Least 30 college credits
- ◯ Associate degree
- ◯ Bachelor degree

4. Which of the following categories best describes your Community Health Worker experience?

- ◯ No experience working as a Community Health Worker
- ◯ Less than one year working as a Community Health Worker
- ◯ 1-3 years working as a Community Health Worker
- ◯ More than 3 years working as a Community Health Worker

CHW 135 - Health Promotion/Disease Prevention Pretest/Spring 2017

Knowledge Questions

These questions help us measure student learning of the content taught in the course.

5. Which of the following is a major protective factor for chronic disease?

- ◯ Smoking
- ◯ Getting a flu shot
- ◯ Getting enough physical activity
- ◯ Regular hand washing

6. What two chronic diseases cause the most deaths overall?

- ◯ Heart disease and cancer
- ◯ Diabetes and cancer
- ◯ Cancer and COPD
- ◯ Flu and pneumonia

7. Which website would you visit to find out if Hawaii is meeting its health goals?

- ◯ WebMD
- ◯ Healthy Health Connector
- ◯ Hawaii Health Matters
- ◯ All of the above

8. What is the CHW's role in a community assessment?

- ◯ Be an effective leader
- ◯ Tell the community what their problems are
- ◯ Show the community the best solutions
- ◯ Ask open-ended questions about the issues

9. Health promotion includes which of the following?

- Health education
- Improving health services
- Advocacy
- All of the above

10. Health promotion efforts that are focused on the social determinants of health can be described as

- medical approaches
- ecological approaches
- behavioral approaches
- downstream approaches

11. Joseph is in charge of creating and implementing a health promotion program in his community. What should be his first step?

- Choose curriculum
- Hire outreach staff
- Get trained on an evidence-based program
- Gather information on community needs

12. If Donna is running a community tobacco cessation program that is based on the Stages of Change Theory, she will

- provide the same health education materials to everyone
- make sure everyone creates a behavior change contract
- find out if people are ready to take action
- remember that some people can’t change

13. Keiko is a CHW starting a new program to that provides healthy food recipes for her community members. According to the Diffusion Theory, to get as many people as possible to begin using these recipes, she should

- try to get opinion leaders to start using the recipes
- charge money for the recipes
- print in blue and red ink
- require anyone who wants the recipe to fill out an intake form

14. Television advertising encouraging you to “Rethink your Drink” and decrease the amount of sugar you drink is an example of

- market sharing
- an effort to change social norms
- an individual-level weight loss program
- propaganda

15. Social networks can provide

- information and support
- access to resources
- pressure to behave in a certain way
- All of the above

16. Popular Education

- uses famous people to deliver information
- is an empowerment approach
- gives people a chance to learn from the experts
- allows learners to relax and not have to participate in class

17. The ability to understand health information and risks is called

- health efficacy
- health esteem
- health literacy
- health informatics

18. To make sure materials are appropriate for your community, you should

- make sure they deliver as much information as possible
- do a pre-test with people from the community
- include all of your learning objectives
- avoid the use of photos or images

19. Which of the following is the most “upstream” approach to preventing cancer?

- ◯ Chemotherapy
- ◯ Cancer screening
- ◯ Access to education
- ◯ Smoking cessation programs

CHW 135 - Health Promotion/Disease Prevention Post-Test Evaluation Survey Spring 2017

The following survey is designed to measure how much students have gained from taking CHW 135 - Health Promotion/Disease Prevention. Your participation is voluntary. If you chose to proceed, your answers will remain anonymous and will not affect your grade in any way. The results from this survey will be used to evaluate the effectiveness of the UHMC CHW Certificate Program.

CHW 135 - Health Promotion/Disease Prevention Post-test/Spring 2017

Student Information

The following questions ask about you. This information will help us understand how well the program helped different kinds of students. Thanks for your anonymous responses.

1. What is your age?

- ◯ Under 18
- ◯ 18-29
- ◯ 30-39
- ◯ 40-49
- ◯ 50-59
- ◯ 60 or older

2. What is your gender?

- ◯ Female
- ◯ Male
- ◯ Non-binary/third gender

3. What race do you consider yourself to be?

- [ ] Hawaiian
- [ ] White/Caucasian (European, German, Irish, Italian, English)
- [ ] Chinese (Taiwanese)
- [ ] Filipino
- [ ] Japanese (Okinawan)
- [ ] Korean
- [ ] Vietnamese
- [ ] Asian Indian
- [ ] Other Asian (Laotian, Thai, Malaysian)
- [ ] Samoan/Tongan
- [ ] Other Pacific Islander (Polynesian, Micronesian, Fijian)
- [ ] Black/African American
- [ ] Native American/Aleut/Eskimo/Inuit
- [ ] Puerto Rican
- [ ] Mexican
- [ ] Portuguese
- [ ] Guamanian/Chamorro

Other (please specify)

4. What is the highest level of school you have completed or the highest degree you have received?

- ◯ High school degree or equivalent (e.g., GED)
- ◯ At least 15 college credits
- ◯ At Least 30 college credits
- ◯ Associates degree
- ◯ Bachelor degree
- ◯ Graduate degree

5. Which of the following categories best describes your Community Health Worker experience?

- ◯ No experience working as a Community Health Worker
- ◯ Less than one year working as a Community Health Worker
- ◯ 1-3 years working as a Community Health Worker
- ◯ More than 3 years working as a Community Health Worker

Confidence Using CHW Knowledge & Skills

The following questions ask you how confident you are in your ability to use the knowledge and skills taught in this course.

Question #6 asks how you felt <u>before</u> taking this course, while Question #7 asks how you feel <u>now</u> that you have completed the course.

6. Before starting this course, how confident were you in your ability to . . . .

	not at all confident	somewhat confident	moderately confident	very confident	extremely confident
Identify risks and resources that affect health in your community	○	○	○	○	○
Find reliable health information online	○	○	○	○	○
Identify health promotion strategies and explain why you would use them	○	○	○	○	○
Present information to community members	○	○	○	○	○
Work together with others to plan and implement health promotion activities	○	○	○	○	○

7. After completing this course, how confident are you in your ability to . . . .

	not at all confident	somewhat confident	moderately confident	very confident	extremely confident
Identify risks and resources that affect health in your community	○	○	○	○	○
Find reliable health information online	○	○	○	○	○
Identify health promotion strategies and explain why you would use them	○	○	○	○	○
Present information to community members	○	○	○	○	○
Work together with others to plan and implement health promotion activities	○	○	○	○	○

CHW 135 - Health Promotion/Disease Prevention Post-test/Spring 2017

Knowledge Questions

These questions help us measure student learning of the content taught in the course.

8. Which of the following is a major protective factor for chronic disease?

- ◯ Smoking
- ◯ Getting a flu shot
- ◯ Getting enough physical activity
- ◯ Regular hand washing

9. What two chronic diseases cause the most deaths overall?

- ◯ Heart disease and cancer
- ◯ Diabetes and cancer
- ◯ Cancer and COPD
- ◯ Flu and pneumonia

10. Which website would you visit to find out if Hawaii is meeting its health goals?

- ◯ WebMD
- ◯ Healthy Health Connector
- ◯ Hawaii Health Matters
- ◯ All of the above

11. What is the CHW's role in a community assessment?

- ◯ Be an effective leader
- ◯ Tell the community what their problems are
- ◯ Show the community the best solutions
- ◯ Ask open-ended questions about the issues

12. Health promotion includes which of the following?

- Health education
- Improving health services
- Advocacy
- All of the above

13. Health promotion efforts that are focused on the social determinants of health can be described as

- medical approaches
- ecological approaches
- behavioral approaches
- downstream approaches

14. Joseph is in charge of creating and implementing a health promotion program in his community. What should be his first step?

- Choose curriculum
- Hire outreach staff
- Get trained on an evidence-based program
- Gather information on community needs

15. If Donna is running a community tobacco cessation program that is based on the Stages of Change Theory, she will

- provide the same health education materials to everyone
- make sure everyone creates a behavior change contract
- find out if people are ready to take action
- remember that some people can’t change

16. Keiko is a CHW starting a new program to that provides healthy food recipes for her community members. According to the Diffusion Theory, to get as many people as possible to begin using these recipes, she should

- try to get opinion leaders to start using the recipes
- charge money for the recipes
- print in blue and red ink
- require anyone who wants the recipe to fill out an intake form

17. Television advertising encouraging you to “Rethink your Drink” and decrease the amount of sugar you drink is an example of

- market sharing
- an effort to change social norms
- an individual-level weight loss program
- propaganda

18. Social networks can provide

- information and support
- access to resources
- pressure to behave in a certain way
- All of the above

19. Popular Education

- uses famous people to deliver information
- is an empowerment approach
- gives people a chance to learn from the experts
- allows learners to relax and not have to participate in class

20. The ability to understand health information and risks is called

- health efficacy
- health esteem
- health literacy
- health informatics

21. To make sure materials are appropriate for your community, you should

- make sure they deliver as much information as possible
- do a pre-test with people from the community
- include all of your learning objectives
- avoid the use of photos or images

22. Which of the following is the most “upstream” approach to preventing cancer?

- ◯ Chemotherapy
- ◯ Cancer screening
- ◯ Access to education
- ◯ Smoking cessation programs

Student Satisfaction in the course

The following questions ask you rate how well the course fulfilled your training needs.

23. How satisfied are you with this course in meeting your professional training needs?

◯ not at all satisfied ◯ slightly satisfied ◯ moderately satisfied ◯ very satisfied ◯ extremely satisfied

24. How satisfied are you with the way the instructor taught this course?

◯ not at all satisfied ◯ slightly satisfied ◯ moderately satisfied ◯ very satisfied ◯ extremely satisfied

25. Overall, how satisfied are you with this course?

◯ not at all satisfied ◯ slightly satisfied ◯ moderately satisfied ◯ very satisfied ◯ extremely satisfied

26. How likely is it that you would recommend this course to a friend or colleague?

◯ not at all likely ◯ slightly likely ◯ moderately likely ◯ very likely ◯ extremely likely

CHW Fundamentals Course Evaluation Survey Consent to Participate

Aloha! My name is Charlie Schlather and you are invited to take part in a research study. I am a graduate student at the University of Hawai'i at Mānoa in the Office of Public Health Studies. As part of the requirements for earning my graduate degree, I am doing a research project. The purpose of my project is to evaluate the effectiveness of the Community Health Worker (CHW) Certificate program at the University of Hawai'i Maui College to provide training for CHWs in Hawai'i. The following survey is designed to measure how much students have gained from taking HSER 101 - CHW Fundamentals. I am asking you to participate because you are taking this CHW certificate course, and you are at least 18 years old.

Project Description – Activities and Time Commitment: If you decide to take part in this project, you will be asked to fill out a survey. The survey questions are all multiple choice. Completing the survey will take approximately 15 minutes. I expect around 65 people will take part in this project.

Benefits and Risks: There will be no direct benefit to you for taking part in this project. The results from this survey will be used to evaluate the effectiveness of this course to teaching you the CHW core competencies, and help us improve the course for future students. There is little risk to you for participating in this project.

Confidentiality and Privacy: I will not ask you for any personal information, such as your name or address. Please do not include any personal information in your survey responses.

Voluntary Participation: You can freely choose to take part or to not take part in this survey. Your responses will remain anonymous and will not affect your course grade or your standing in this program in any way. There will be no penalty or loss of benefits for either decision. If you do agree to participate, you can stop at any time.

Questions: If you have any questions about this study, please call or email me at 808.984.3218, tcs7@hawaii.edu. You may also contact my advisor, Dr. Kathryne Braun, at 808.330.1759, kbraun@hawaii.edu. You may contact the UH Human Studies Program at 808.956.5007, uhirb@hawaii.edu to discuss problems, concerns and questions; obtain information; or offer input with an informed individual who is unaffiliated with the specific research protocol. Please visit https://www,hawaii.edu/researchcompliance/information-research-participants for more information on your rights as a research participant. Filling out the survey will be considered as your consent to participate in this study.

___

Please print a copy of this page for your reference.

HSER 101 - CHW Fundamentals - Pretest/Fall 2017

Unique Identifier

To assure your answers are anonymous and paired to your pre-test, please create a unique identifier by answering the following questions

1. What was the make and model of your first car?

2. What was the name of your first pet?

3. Who was your childhood hero?

4. What is your favorite flavor of ice cream?

HSER 101 - CHW Fundamentals - Pretest/Fall 2017

Student Information

The following questions ask about you. This information will help us understand how well the program helped different kinds of students. Thanks for your anonymous responses.

5. How old are you?

- ◯ 18-29
- ◯ 30-39
- ◯ 40-49
- ◯ 50-59
- ◯ 60 or older

6. What is your gender?

- ◯ Female
- ◯ Male
- ◯ Non-binary/third gender

7. What race do you consider yourself to be?

- [ ] Hawaiian
- [ ] White/Caucasian (European, German, Irish, Italian, English)
- [ ] Chinese (Taiwanese)
- [ ] Filipino
- [ ] Japanese (Okinawan)
- [ ] Korean
- [ ] Vietnamese
- [ ] Asian Indian
- [ ] Other Asian (Laotian, Thai, Malaysian)
- [ ] Samoan/Tongan
- [ ] Other Pacific Islander (Polynesian, Micronesian, Fijian)
- [ ] Black/African American
- [ ] Native American/Aleut/Eskimo/Inuit
- [ ] Puerto Rican
- [ ] Mexican
- [ ] Portuguese
- [ ] Guamanian/Chamorro

Other (please specify)

8. What is the highest level of school you have completed or the highest degree you have received?

- ◯ High school degree or equivalent (e.g., GED)
- ◯ Some college but no degree
- ◯ Associate degree
- ◯ Bachelor degree
- ◯ Graduate degree

9. Which of the following categories best describes your Community Health Worker experience?

- ◯ No experience working as a Community Health Worker
- ◯ Less than one year working as a Community Health Worker
- ◯ 1-3 years working as a Community Health Worker
- ◯ More than 3 years working as a Community Health Worker

HSER 101 - CHW Fundamentals - Pretest/Fall 2017

Knowledge Questions

These questions help us measure student learning of the content taught in the course.

10. CHWs are unique because they

- ◯ provide substance abuse counseling services
- ◯ are not paid for their services
- ◯ have an unusually close understanding of the community served
- ◯ provide medical interventions for underserved populations

11. The US health care system

- ◯ has too many primary care physicians
- ◯ is an integrated system, with doctors working together as a team
- ◯ focuses on prevention rather than expensive technology
- ◯ spends the most money per person in the world but doesn't have the best health outcomes

12. Cultural humility requires

- ◯ intimate knowledge about the other person’s cultural values and practice
- ◯ cultural competency training
- ◯ cross cultural emersion
- ◯ the recognition that the client is the expert in their own cultural identity

13. Patient/client-centered care believes that

- ◯ doctor’s orders need to be followed
- ◯ patients should be more involved in medical decisions
- ◯ more time and money should be spent providing medical treatments
- ◯ none of the above

14. Jayden tells you she is Hawaiian, even though her heritage/bloodline is part Chinese/Portuguese/Hawaiian.
She is expressing her

- ◯ race
- ◯ phenotype
- ◯ ethnic identity
- ◯ bias

15. CHW roles include

- ◯ diagnosis
- ◯ billing
- ◯ outreach
- ◯ therapy

16. Public Health is primarily focused on

- ◯ population health
- ◯ individual health
- ◯ cardiovascular health
- ◯ aging services

17. Which ethnic group has the shortest life expectancy in Hawaii?

- ◯ Philipino
- ◯ Chinese
- ◯ Hawaiian
- ◯ Japanese

18. _____ is a Social Determinant of Health

- ◯ blood pressure
- ◯ insulin
- ◯ housing
- ◯ genetics

19. Each time Joey visits his primary care doctor, his health insurance charges him $15.
This is considered a

- premium
- capitation
- co-payment
- deductible

20. Kayla is a CHW working at a community health center. She needs to get the outside of her house painted. One of her clients is a professional painter and offers to paint her house.
This situation is

- a good way for her to save some money
- acceptable as long as she pays market price
- a good opportunity for her to help her client get work
- considered a dual relationship and should be avoided

21. CHWs only need to understand and work with members of their own culture/community.

- Ture
- False

22. Sam is a CHW working with a 13yo girl who he suspects has been physically abused by her father.
Sam should

- discuss his concerns with the father in an effort to prevent further abuse
- take the girl home with him and call the police
- call Child Protective Services and report the allegations
- ask the girl whether she wants him to report the abuse

23. John is a CHW who has established a close relationship with a patient. The patient requested to*friend (i.e. add)* him on Facebook.
John should

- wait until the patient is no longer accessing services through his agency before accepting
- accept the invitation but only share limited access
- take this time to talk about the nature of their working relationship
- ignore the request and wait to see if the patient persists

24. Maria is a CHW working with a male veteran who is homeless. She begins by thanking him for coming in and recognizes the courage it took for him to take this step. She then asked how he has solved problems in the past.
Maria is demonstrating

- the Medical Model
- the Housing First Approach
- the Strengths Perspective
- Maslow's Hierarchy of Need

CHW Fundamentals Course Evaluation Survey Consent to Participate

Aloha! My name is Charlie Schlather and you are invited to take part in a research study. I am a graduate student at the University of Hawai'i at Mānoa in the Office of Public Health Studies. As part of the requirements for earning my graduate degree, I am doing a research project. The purpose of my project is to evaluate the effectiveness of the Community Health Worker (CHW) Certificate program at the University of Hawai'i Maui College to provide training for CHWs in Hawai'i. The following survey is designed to measure how much students have gained from taking HSER 101 - CHW Fundamentals. I am asking you to participate because you are taking this CHW certificate course, and you are at least 18 years old.

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Confidentiality and Privacy: I will not ask you for any personal information, such as your name or address. Please do not include any personal information in your survey responses.

Voluntary Participation: You can freely choose to take part or to not take part in this survey. Your responses will remain anonymous and will not affect your grade in this course or standing in this program in any way. There will be no penalty or loss of benefits for either decision. If you do agree to participate, you can stop at any time.

Questions: If you have any questions about this study, please call or email me at 808.984.3218, tcs7@hawaii.edu. You may also contact my advisor, Dr. Kathryne Braun, at 808.330.1759, kbraun@hawaii.edu. You may contact the UH Human Studies Program at 808.956.5007, uhirb@hawaii.edu to discuss problems, concerns and questions; obtain information; or offer input with an informed individual who is unaffiliated with the specific research protocol. Please visit https://www,hawaii.edu/researchcompliance/information-research-participants for more information on your rights as a research participant. Filling out the survey will be considered as your consent to participate in this study.

___

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HSER 101 - CHW Fundamentals - Posttest/Fall 2017

Unique Identifier

To assure your answers are anonymous and paired to your pre-test, please create a unique identifier by answering the following questions

1. What was the name of your first pet?

2. What was the make and model of your first car?

3. Who was your childhood hero?

4. What is your favorite flavor of ice cream?

HSER 101 - CHW Fundamentals - Posttest/Fall 2017

Student Information

The following questions ask about you. This information will help us understand how well the program helped different kinds of students. Thanks for your anonymous responses.

5. How old are you?

- ◯ 18-29
- ◯ 30-39
- ◯ 40-49
- ◯ 50-59
- ◯ 60 or older

6. What is your gender?

- ◯ Female
- ◯ Male
- ◯ Non-binary/third gender

7. What race do you consider yourself to be?

- [ ] Hawaiian
- [ ] White/Caucasian (European, German, Irish, Italian, English)
- [ ] Chinese (Taiwanese)
- [ ] Filipino
- [ ] Japanese (Okinawan)
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HSER 101 - CHW Fundamentals - Posttest/Fall 2017

Confidence Using CHW Knowledge & Skills

The following questions ask you how confident you are in your ability to use the knowledge and skills taught in this course.

Question #6 asks how you felt before taking this course, while Question #7 asks how you feel now that you have completed the course.

Please mark the one selection that best describes how confident you are in your ability to do the following:

10. Before starting this course, how confident were you in your ability to . . .

	not at all confident	somewhat confident	moderately confident	very confident	extremely confident
Explain who CHWs are and what they do	○	○	○	○	○
Practice cultural humility when working with people of other cultural backgrounds	○	○	○	○	○
Help someone in your community understand health insurance	○	○	○	○	○
Identify the social determinants of health that affect individuals in your community	○	○	○	○	○
Maintain healthy boundaries with those you help	○	○	○	○	○

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Maria is demonstrating

- the Medical Model
- the Housing First Approach
- the Strengths Perspective
- Maslow's Hierarchy of Need

HSER 101 - CHW Fundamentals - Posttest/Fall 2017

Student Satisfaction in the course

The following questions ask you rate your satisfaction with this course.

27. How satisfied are you with this course in meeting your professional training needs?

◯ not at all satisfied ◯ slightly satisfied ◯ moderately satisfied ◯ very satisfied ◯ extremely satisfied

28. How satisfied are you with the way the instructor taught this course?

◯ not at all satisfied ◯ slightly satisfied ◯ moderately satisfied ◯ very satisfied ◯ extremely satisfied

29. Overall, how satisfied are you with this course?

◯ not at all satisfied ◯ slightly satisfied ◯ moderately satisfied ◯ very satisfied ◯ extremely satisfied

30. How likely is it that you would recommend this course to a friend or colleague?

◯ not at all likely ◯ slightly likely ◯ moderately likely ◯ very likely ◯ extremely likely

Interview Guide

Greet participant and introduce self.

Read the following Statement:

> You are being asked to take part in a research study to learn about CHW Employer Perceptions of the UHMC CHW Certificate Program
>
> Employer feedback will help to determine the degree to which the certificate program prepares students for the CHW field.
>
> We will be interviewing between 8 and 10 employers of CHWs who are taking the certificate, and site supervisors of students taking the practicum class.
>
> If you agree to participate in this study, I will ask you 8 questions, with follow up questions to clarify your responses if needed. The interview should take about 1 hour.
>
> With your permission, I would like to audio record the session so that your responses can be transcribed for analysis.
>
> Your answers will remain anonymous. The audio recording of this interview will be destroyed after it is transcribed. All identifying information about you will be removed from the transcription prior to sharing with program staff, and in any public report. Research records will be kept in a locked file; only the researchers will have access to the records.
>
> Taking part in this study is completely voluntary. You may skip any questions that you do not want to answer. If you decide not to take part or to skip some of the questions, it will not affect your current or future relationship with this program. If you decide to take part, you are free to withdraw at any time.
>
> Would you be open to being contacted at a future time if I there are any clarifying questions about your statements?
>
> Would you like us to share a copy of any published articles?

Hand participant consent form to be signed. Provide participant time to ask questions about the study and the consent form.

Ask the following questions:

1) How has the training impacted the student's performance on the job?
2) Are there specific competencies the student mastered?
3) In what areas do students need further training in order to be completely prepared to enter the field?
4) What barriers are there to providing raises, promotions, new positions to certificate completers?
5) What effects has student participation in the certificate program had on your agency?
6) How can we improve the program to better suit your agency and the larger workforce needs in our community?

Clarifying questions can be used to clarify or expand participant statements (e.g. Could you tell me more about that? I am not sure I heard/understood what you just said. Could you repeat that, please?) Probing questions can also be used to ask a participant to provide an example when a student demonstrated a skill, strength, weakness, etc.

Take notes during the interview, detailing non-verbal communication and important contextual factors not captured in the audio recording.

Thank participant for their time and gift a culturally appropriate, non-momentary mahalo gift (e.g. fruit or flowers, etc.).

University of Hawai'i
Consent to Participate in a Research Project
Kathryn Braun, DrPH, Principal Investigator
Project title: The University of Hawai'i Maui College Community Health Worker Certificate Program Evaluation Study

Aloha! My name is Charlie Schlather and you are invited to take part in a research study. I am a graduate student at the University of Hawai'i at Mānoa in the Office of Public Health Studies. As part of the requirements for earning my graduate degree, I am doing a research project. The purpose of my project is to evaluate the effectiveness of the Community Health Worker (CHW) Certificate program at the University of Hawai'i Maui College to provide training for CHWs in Hawai'i. The purpose of this study is gather Employer feedback to determine the degree to which the certificate program prepares students for the CHW field. I am asking you to participate because you are either a CHW employer or practicum supervisor for a student in the program.

Project Description – Activities and Time Commitment: If you agree to be in this study, Malia Purdy, a member of the research team, will conduct an interview with you. You will be asked to share your observations of the student(s) in your agency that are participating in this CHW certificate program. Completing the interview will take approximately 60 minutes. I expect 8-10 people will take part in this project.

Benefits and Risks: The results of the study will be shared with you once published. Other than that, there are no direct benefits to you or your agency. There is little risk to you for participating in this project.

Confidentiality and Privacy: Your answers will remain anonymous. With your permission, this interview audio-recorded for later transcription. The audio recording of this interview will be destroyed after it is transcribed. All identifying information about you will be removed from the transcription prior to sharing with program staff, and in any public report. Research records will be kept in a locked file; only the researchers will have access to the records.

Voluntary Participation: You can freely choose to take part or to not take part in this interview. You may skip any questions that you do not want to answer. If you decide not to take part or to skip some of the questions, it will not affect your current or future relationship with this program. If you decide to take part, you are free to withdraw at any time.

Questions: If you have any questions about this study, please call or email me at 808.984.3218, tcs7@hawaii.edu. You may also contact my advisor, Dr. Kathryne Braun, at 808.330.1759, kbraun@hawaii.edu. You may contact the UH Human Studies Program at 808.956.5007, uhirb@hawaii.edu to discuss problems, concerns and questions; obtain information; or offer input with an informed individual who is unaffiliated with the specific research protocol. Please visit https://www,hawaii.edu/researchcompliance/information-research-participants for more information on your rights as a research participant. Filling out the survey will be considered as your consent to participate in this study.

University of Hawai'i
Consent to Participate in a Research Project
Kathryn Braun, DrPH, Principal Investigator
Project title: The University of Hawai'i Maui College Community Health Worker Certificate Program Evaluation Study

Please keep this page for your records.

Signature(s) for Consent:

I give permission to join the research project entitled, *The University of Hawai'i Maui College Community Health Worker Certificate Program Evaluation Study*

Please initial next to either "Yes" or "No" to the following:

_____ Yes _____ No I consent to be audio-recorded for the interview portion of this research.

Name of Participant (Print): _____

Participant's Signature: _____

Signature of the Person Obtaining Consent: _____

Date: _____

Mahalo!

Consent to Participate

Aloha! My name is Charlie Schlather and I would like to invite you to take part in a research study. I am a graduate student at the University of Hawai'i at Mānoa in the Office of Public Health Studies. As part of the requirements for earning my graduate degree, I am doing a research project. The purpose of my project is to evaluate the effectiveness of the Community Health Worker (CHW) Certificate program at the University of Hawai'i Maui College to provide training for CHWs in Hawai'i. The following survey is designed to measure the impact this training has had on the career outcomes of those who have completed the certificate. I am asking you to participate because you have graduated the program, and you are at least 18 years old.

Project Description, Activities and Time Commitment: If you decide to take part in this project, you will be filling out a survey. The survey questions are primarily multiple choice, with a few short answer questions. Completing the survey will take approximately 20 minutes. I expect around 35 people will take part in this project.

Benefits and Risks: There will be no direct benefit to you for taking part in this project. The results from this survey will be used to evaluate the effectiveness of the CHW certificate and help us improve the program for future students. There is little risk to you for participating in this project.

Confidentiality and Privacy: I will not ask you for any personal information, such as your name or address. Please do not include any personal information in your survey responses.

Voluntary Participation: You can freely choose to take part or to not take part in this survey. Your responses will remain anonymous and will not affect your standing in this program in any way. There will be no penalty or loss of benefits for either decision. If you do agree to participate, you can stop at any time.

Questions: If you have any questions about this study, please call or email me at 808.984.3218, tcs7@hawaii.edu. You may also contact my advisor, Dr. Kathryne Braun, at 808.330.1759, kbraun@hawaii.edu. You may contact the UH Human Studies Program at 808.956.5007, uhirb@hawaii.edu to discuss problems, concerns and questions; obtain information; or offer input with an informed individual who is unaffiliated with the specific research protocol. Please visit https://www,hawaii.edu/researchcompliance/information-research-participants for more information on your rights as a research participant.

Filling out the survey will be considered as your consent to participate in this study.

Student Information

The following questions ask about you. This information will help us understand how well the program helped different kinds of students.

1. How old are you?

- ◯ 18-29
- ◯ 30-39
- ◯ 40-49
- ◯ 50-59
- ◯ 60 or older

2. What is your gender

- ◯ Male
- ◯ Female
- ◯ Non-binary/third gender

3. What race do you consider yourself to be?

- ◯ Hawaiian
- ◯ White/Caucasian (European, German, Irish, Italian, English)
- ◯ Chinese (Taiwanese)
- ◯ Filipino
- ◯ Japanese (Okinawan)
- ◯ Korean
- ◯ Vietnamese
- ◯ Asian Indian
- ◯ Other Asian (Laotian, Thai, Malaysian)
- ◯ Samoan/Tongan
- ◯ Other Pacific Islander (Polynesian, Micronesian, Fijian)
- ◯ Black/African American
- ◯ Hispanic
- ◯ Native American/Aleut/Eskimo/Inuit
- ◯ Portuguese
- ◯ Guamanian/Chamorro
- ◯ Other (please specify)

4. When you started this program, what was the highest level of school you had completed or the highest degree you have received?

- ◯ Less than high school degree or equivalent (e.g., GED)
- ◯ High school degree or equivalent (e.g., GED)
- ◯ At least 15 college credits
- ◯ At Least 30 college credits
- ◯ Associate degree
- ◯ Bachelor degree

5. Which of the following categories best describes your Community Health Worker experience to-date?

- ◯ No experience working as a Community Health Worker
- ◯ Less than one year working as a Community Health Worker
- ◯ 1-3 years working as a Community Health Worker
- ◯ More than 3 years working as a Community Health Worker

6. What semester did you complete the UHMC CHW Certificate?

- ◯ Spring 2016
- ◯ Fall 2016
- ◯ Spring 2017

7. *When you **enrolled** in the program,* were you working full-time, part-time, or not working?

- ◯ I was working full-time (35 or more hours/week)
- ◯ I was working part-time (less than 35 hours/week)
- ◯ I was not working

Incumbent Worker Information

8. *When you **enrolled** in the program*, were you working as a CHW or a related helping professional?

- ◯ Not working as CHW or in a related helping professional
- ◯ Working as a CHW
- ◯ Working as a related helping professional (please specify)

9. *When you **enrolled** in the program*, how much did you earn in your job? Choose any of the following to report.

Per Hour	
OR Per Month	
OR Per Year	

Current Employment I

10. *Are you **currently** working* full-time, part-time, or not working?

- ◯ I am working full-time (35 or more hours/week)
- ◯ I am working part-time (less than 35 hours/week)
- ◯ I am not working

Current Employment II

11. *Are you **currently** working* as a CHW or a related helping professional?

- ◯ Not working as CHW or in a related helping professional
- ◯ Working as a CHW
- ◯ Working as a related helping professional (please specify)

12. How much are you earning *at your **current** job*? Choose any of the following to report.

Per Hour	
OR Per Month	
OR Per Year	

Impact on Current Employment

13. Have you received a raise and/or promotion during or after completing the UHMC CHW certificate?

- ◯ Raise
- ◯ Promotion
- ◯ Raise and promotion
- ◯ No raise or promotion

Future career goals

14. Now that you have completed the certificate program, do you plan to get a job, continue your education, both or neither?

- ◯ Get a job or continue current job
- ◯ Continue my education
- ◯ Both get a job (or continue current job) and continue my education
- ◯ Neither get a job or continue my education

Educational Goals

15. What degree(s) or credential(s) do you plan to complete? (Check all that apply)

- [ ] Associate Degree
- [ ] Bachelor's Degree
- [ ] Master's Degree
- [ ] Doctoral Degree
- [ ] Certified Substance Abuse Certificate (CSAC)
- [ ] Other (please specify)

Finding Employment

16. How confident do you feel that you will be able to find a job as a CHW or as an other helping professional?

- ◯ Not confident at all
- ◯ Somewhat confident
- ◯ Moderately confident
- ◯ Very confident
- ◯ Extremely confident

Impact of the UHMC CHW Certificate Program on CHW skills

Please refer to the C3 Skills handout provided for a descriptions of each skill (#1 thru #11).

17. How much have you improved in the following skills as a result of taking the UHMC CHW Certificate program?

	Not at all improved	Somewhat improved	Moderately improved	Very improved	Extremely improved
#1 Communication skills	○	○	○	○	○
#2 Interpersonal and relationship-building skills	○	○	○	○	○
#3 Service Coordination and Navigation Skills	○	○	○	○	○
#4 Capacity building skills	○	○	○	○	○
#5 Advocacy Skills	○	○	○	○	○
#6 Education and Facilitation Skills	○	○	○	○	○
#7 Individual and Community Assessment Skills	○	○	○	○	○
#8 Outreach Skills	○	○	○	○	○
#9 Professional Skills and Conduct	○	○	○	○	○
#10 Evaluation and Research Skills	○	○	○	○	○
#11 Knowledge base	○	○	○	○	○

18. Which teaching strategies seemed to work the best for you in learning the skills above?

19. Which teaching strategies seemed to be the least effective for you in learning the skills above?

Impact of certificate on career and goals

20. What rewards have you received as a result of completing the UHMC-CHW Certificate

	does not apply	no	yes
I am better at my job	○	○	○
I received a wage increase (raise) at my job	○	○	○
I have greater responsibility at my current job	○	○	○
I am continuing my education	○	○	○
I have completed the program and have not received any reward	○	○	○

21. To what extent do you agree with the following statements?

	does not apply	strongly disagree	disagree	neutral	agree	strongly agree
Completing the UHMC CHW certificate has started me on a path to reaching my career goals	○	○	○	○	○	○
I am considering career options that I was not considering before completing the UHMC CHW certificate	○	○	○	○	○	○
Since completing the UHMC CHW certificate, I am more satisfied with my job than I was before	○	○	○	○	○	○
Since completing the UHMC CHW certificate, other professionals respect me more	○	○	○	○	○	○

22. It what other ways has the UHMC CHW certificate program contributed to your professional and/or personal life?

23. In what ways has completing the UHMC-CHW certificate program not met your expectations for career advancement?

Satisfaction with the UHMC CHW Certificate Program

Please consider your overall experience being a student in this program.

24. How satisfied are you with this program in meeting your professional training needs?

◯ not at all satisfied ◯ slightly satisfied ◯ moderately satisfied ◯ very satisfied ◯ extremely satisfied

25. How satisfied are you with the instructors teaching the courses in this program?

◯ not at all satisfied ◯ slightly satisfied ◯ moderately satisfied ◯ very satisfied ◯ extremely satisfied

26. How satisfied are you with the support you received from your instructors and school counselors while completing the certificate?

◯ not at all satisfied ◯ slightly satisfied ◯ moderately satisfied ◯ very satisfied ◯ extremely satisfied

27. How likely are you to recommend this program to a friend or colleague?

◯ not at all likely ◯ slightly likely ◯ moderately likely ◯ very likely ◯ extremely likely

28. What did you like most about the program?

29. What would you change about the program?

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